FARMALL FARMING

McCormick-Deering Farmall Tractors and Equipment

What It Means to Farm with Farmalls

The Farmall owner with his *ready* supply of *ample* power waits until the soil is ready to work up right. The result is *better seedbeds* and *better yields* actually with less time and expense because the soil *is* right to work.

The Farmall is *ready to go* full-tilt from the very start of spring work—it needs no breaking in—never gets sore shoulders. If the season is late the tractor can be worked overtime to get the seedbeds ready.

And how it eats up the work! It travels at fast working speeds and pulls large machines. It makes any man twice a man by multiplying the work he can do. A boy in his 'teens is as good as a veteran when he rides a Farmall.

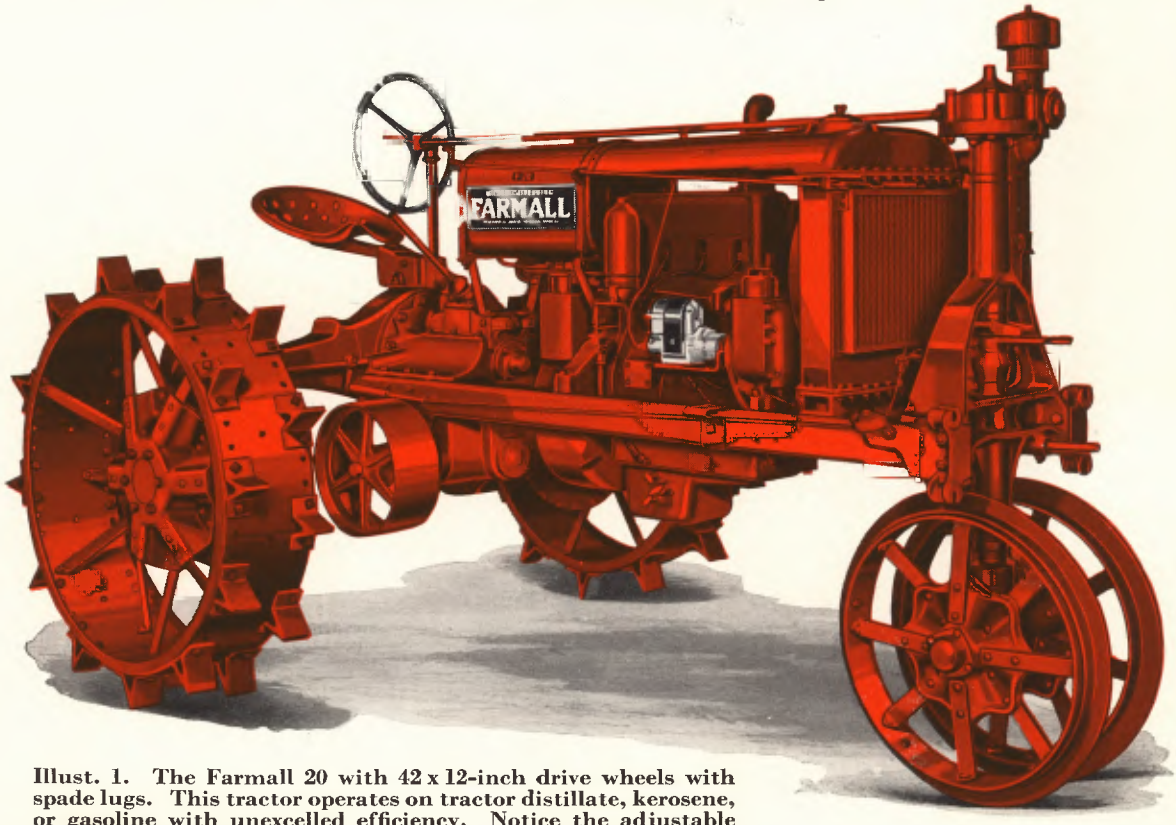
Therefore, the Farmall owner actually hurries less and worries less. Unless he's a born worrier he worries not at all—he knows his plantings will be in the ground in *good time*.

In the cultivating season the Farmall gets through the crops so quick that there is plenty of time to cultivate as often as the crops need it. When the hay crop is ready the Farmall enables its owner to hop right in and get the hay in mow or stack just when the feed quality is highest. In fact, from year's end to year's end the Farmall owner is able to get all his work done in proper season.

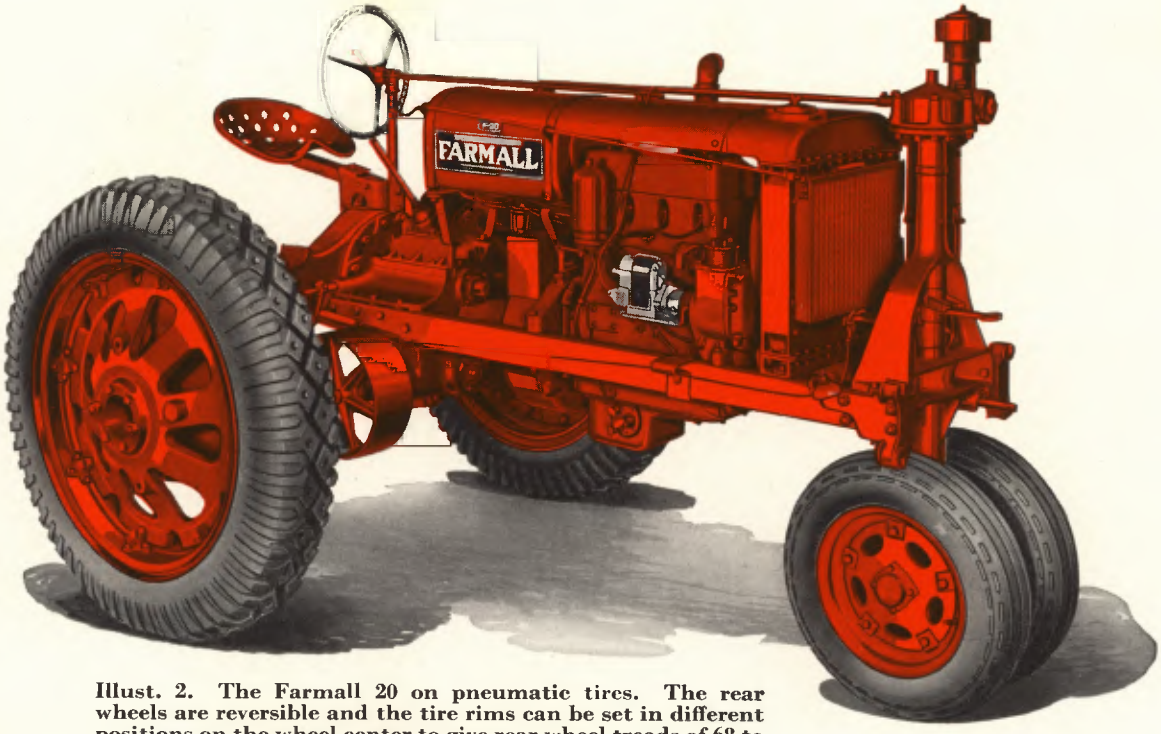
There is another satisfaction which Farmall owners have—right from the beginning of their ownership. They know that the Farmall is the one tractor that really has an established reputation for handy, ample, and economical power over a long period. Farmalls ten years and more old are still going strong.

Still another advantage of Farmall ownership is the number of field-proved implements made for direct attachment to the Farmall. No other line has behind it such a wide range of all-purpose tractor and machine experience.

The Farmall owner actually has more time to live. Of the 25 years which the average farmer spends in actual farm work, the man who farms with horses works 11 years, while the man farming the same acreage with the Farmall works $3\frac{1}{2}$ years. Some Farmall owners use their extra time to farm more land, and some use it to get greater enjoyment just out of living. However they use it, their lives are richer through Farmall ownership.



Illust. 1. The Farmall 20 with 42 x 12-inch drive wheels with spade lugs. This tractor operates on tractor distillate, kerosene, or gasoline with unexcelled efficiency. Notice the adjustable radiator shutter which is now included with regular equipment.



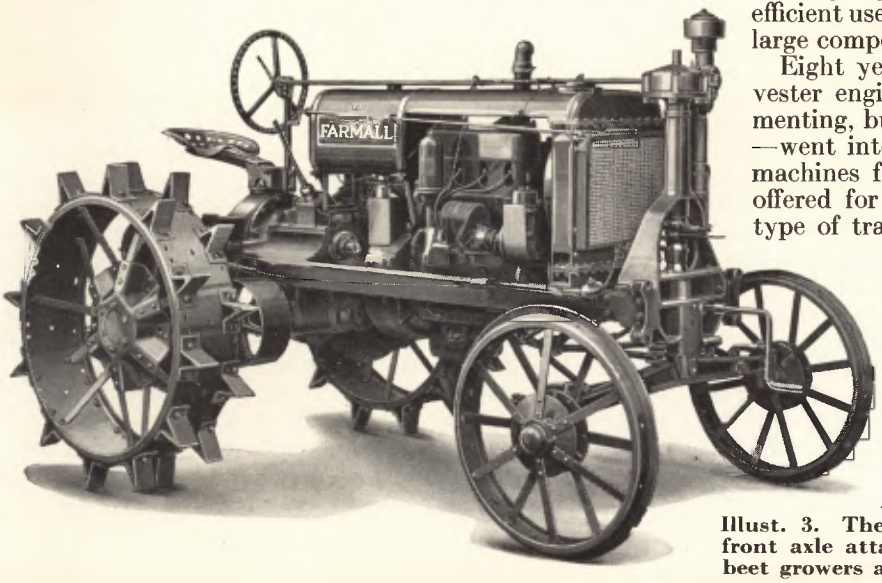
Illust. 2. The Farmall 20 on pneumatic tires. The rear wheels are reversible and the tire rims can be set in different positions on the wheel center to give rear wheel treads of 68 to 96 inches in 4-inch intervals.

The McCormick-Deering FARMALL is the *Original, Successful, Row-Crop, All-Purpose* Tractor

More than 300,000 Farmalls are on farms. There is only one way to account for such a figure—ever since the first Farmall was sold early in 1924, farmers have been choosing Farmalls on the strength of what they have heard and seen of Farmall performance on their neighbors' farms. In other words, the Farmall has an established record for easy handling, adaptability to all kinds of farm work, and unusual stamina. There are Farmalls working today that have been working more years than any other make of all-purpose tractor is old. Farmalls put out in 1924 are to be seen working side by side with new Farmalls.

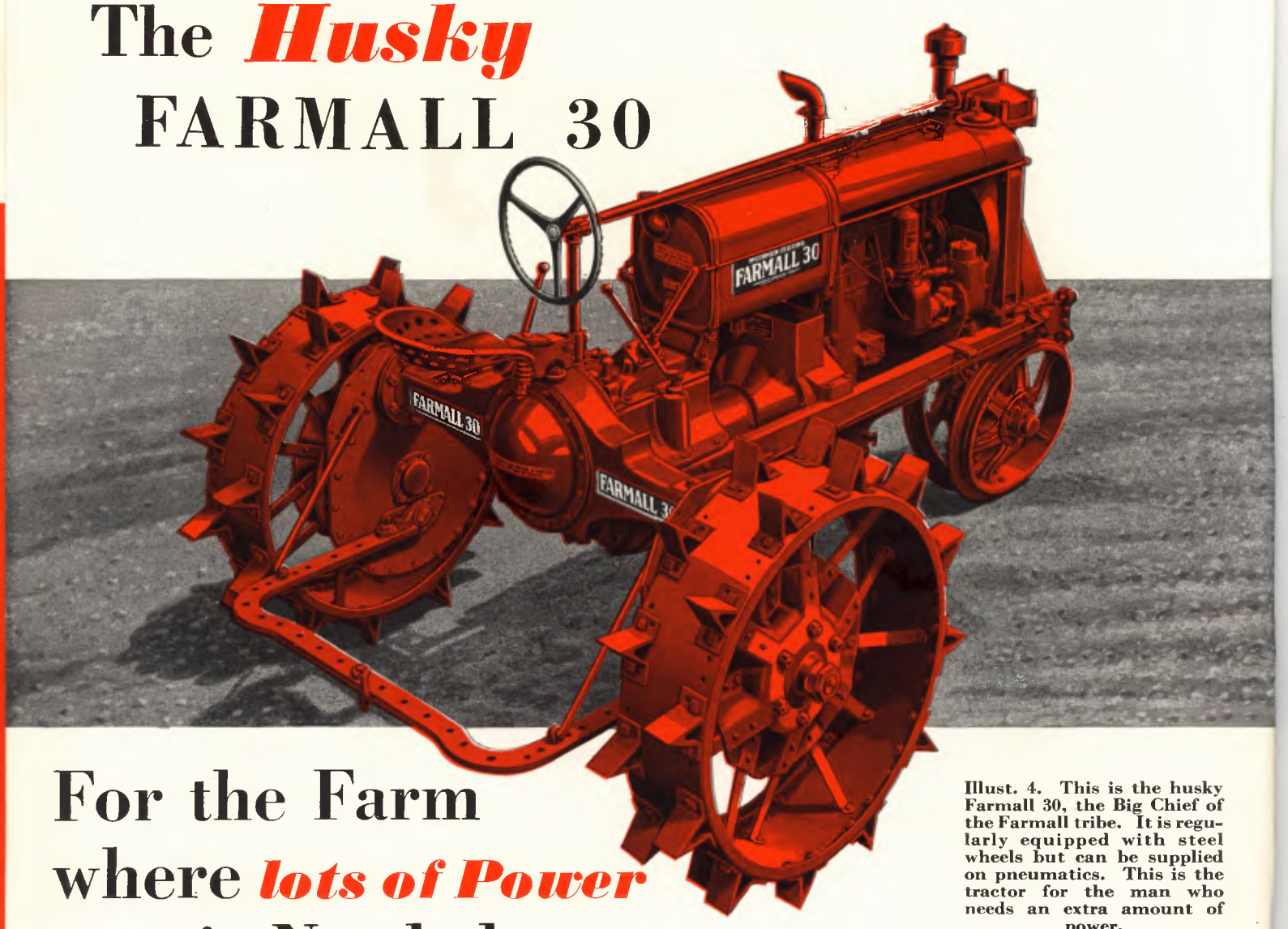
Of course the new Farmall 20 is pulling heavier loads—doing more work. It has a good 30 per cent more power than the original and it has been improved and refined in other ways—has an additional plowing speed, variable-speed governor, automatic-impulse magneto coupling, adjustable radiator shutter for more efficient use of tractor distillate or other low-priced fuel, large composition steering wheel, etc.

Eight years of intensive study by numerous Harvester engineers—eight years of continuous experimenting, building, trying out, rejecting, starting over—went into the building of the first Farmall and the machines for use with it before ever a Farmall was offered for sale—eight years' start in designing this type of tractor and equipment! Since it was introduced, improvements have been made as experience has dictated, power added to give the Farmall purchaser more and more for his money. But in one way it is the same Farmall, and that is in its staying qualities—its ability to last for long years of dependable, economical, satisfactory service.



Illust. 3. The narrow-tread Farmall equipped with wide front axle attachment. This attachment is popular with beet growers and others who plant in narrow-spaced rows.

The *Husky* FARMALL 30



Illust. 4. This is the husky Farmall 30, the Big Chief of the Farmall tribe. It is regularly equipped with steel wheels but can be supplied on pneumatics. This is the tractor for the man who needs an extra amount of power.

For the Farm where *lots of Power* is Needed

WHEREVER you go in the country during the busy farm season, in the fields along the main highways and out along the crossroads and byroads, you see Farmalls at work. They may be gray or a flaming red, but from their lines, and the smooth, rhythmic businesslike sound of their motors, you can tell they are Farmalls even before you get close enough to see the name on the tanks. According to the season and the locality, you see them plowing, disking, planting, cultivating, making hay; pulling binders, harvester-threshers, potato diggers; threshing grain, husking corn. Some of them are Farmall 12's; about two in three of them are Farmall 20's, since the Farmall 20 fits best the largest group of farms; and some of those you see are Farmall 30's.

From a distance you can't tell the F-30 from the F-20. That's because it's built to approximately the same general dimensions so that the same row-crop implements can be attached to it. But as you come closer you see that the F-30 is pulling three, sometimes four, large bottoms or a 10-foot double-disk harrow with a peg-tooth harrow or a soil pulverizer trailing the disk. Or you see it operating a 28-46 threshing rig or doing other jobs that call for lots of power. Then you realize that you are looking at the Big Chief of the Farmall tribe.

The Farmall 30 is the tractor for the row-crop farms of 300 acres, and larger or smaller farms where for one reason or another an extra amount of power is required. Maybe the soil is extra tough to handle, calling for more pounds-pull at the drawbar. Or perhaps the acreage is large enough to keep more than one tractor busy and the owner needs additional drawbar and belt capacity. Maybe there is an unusual amount of custom work to be done. Whatever the reason, wherever extra husky, economical power is required, especially on row-crop farms, the Farmall 30 fills the bill.

Bear in mind that the Farmall 30 is just the big brother of the original Farmall, with the same patented features which, in addition to its reputation for long life, have enabled Farmall tractors to maintain their leadership in the all-purpose tractor class.

Farmall *Specifications* Supply Key to Farmall *Performance*

FARMALL tractors come to you ready to supply abundant power for every farm power job. The specifications below are a key to the ability of these tractors to serve long and efficiently.

All have oil filter, oil air cleaners and Harvester's own magneto with automatic-impulse coupling. The F-20 and F-30 use tractor distillate, kerosene or gasoline and have adjustable radiator shutter and heat indicator. The latter equipment is supplied with the F-14 when ordered with kerosene equipment. Equipment includes belt pulley.

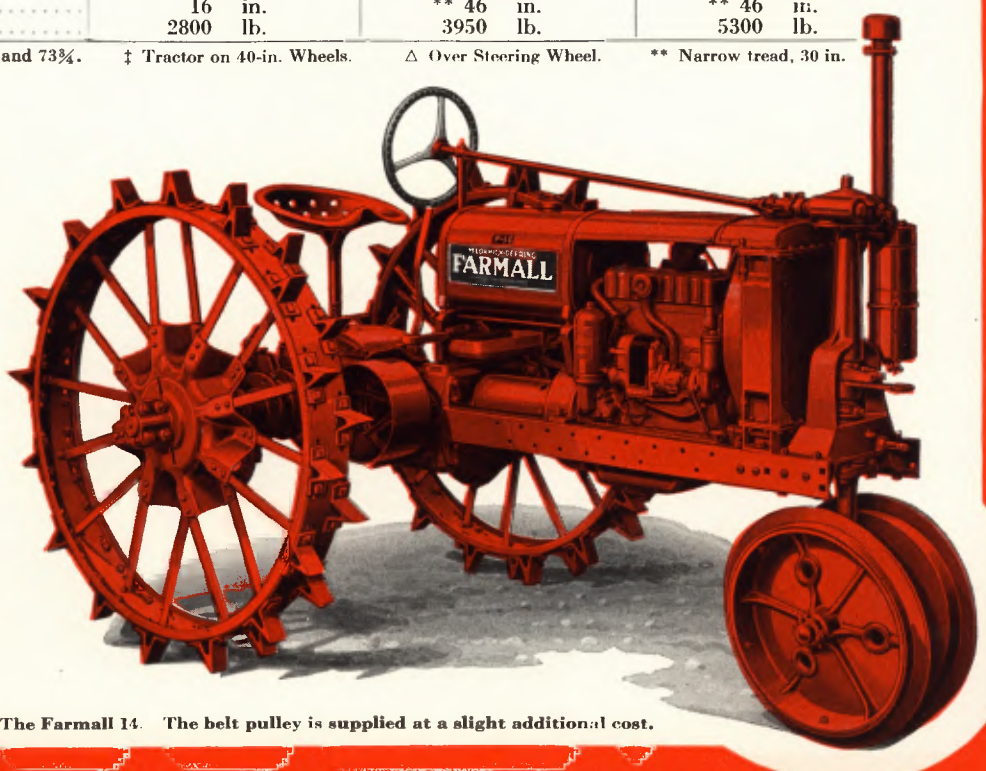
Special transmissions available for rubber-tired Farmalls give traveling speed of upwards of nine miles per hour in high gear.

	Farmall 14	Farmall 20	Farmall 30
Maximum Drawbar Horsepower	15.36	21.30	27.03
Maximum Belt Horsepower	18.21	28.00	35.63
Rated Drawbar Horsepower (75% of max.)	11.52	15.98	20.27
Rated Belt Horsepower (85% of max.)	15.48	23.80	30.29
Forward Speeds, miles per hour	2¼, 3, and 3¾	2¼, 2¾, 3¼, and 3¾	2, 2¾, 3⅜, and 4
Reverse Speed, miles per hour	2¼	2¾	2½
Speed of Engine on load, rev. per min.	1650	1200	1200
Governor	Controlled from seat for 1150 to 1650 R.P.M.	Controlled from seat for 950 to 1200 R.P.M.	Controlled from seat for 950 to 1200 R.P.M.
Bore of Cylinders and Stroke	3 by 4 in.	3¾ by 5 in.	4¼ by 5 in.
Belt Pulley, diameter	12⅜ in.	15¼ in.	14⅝ in.
Belt Pulley, face	6¼ in.	6½ in.	7½ in.
Pulley Speed, rev. per min.	797	654	712
Belt Speed, feet per min.	2580	2610	2725
Power Take-Off Shaft, rev. per min.	550	505	557
Front Wheels	22⅜ by 4 in.	25 by 4 in.	25 by 4 in.
Tread, front wheels	6¾ in. (C. to C.)	8½ in. (C. to C.)	8⅞ and 11⅝ in. (C. to C.)
Drive Wheels	54 by 6 in.	40 by 6 in. *	42 by 12 in.
Tread, drive wheels (C. to C.)	44½ to 79 in.	74⅜ and 83 in. †	77¼ and 85½ in.
Wheelbase	77 in.	85 in.	94 in.
Total Length	124 in.	140 in.	147 in.
Total Width	74¼ in. (ends of axles)	86⅜ and 95⅛ in.	89¼ and 97½ in.
Height, over all, less lugs	△70½ in.	78⅝ in. ‡	81 in.
Height, top of air strainer	84 in.	70 in. ‡	70½ in.
Turning Radius	7 ft.	8 ft.	8⅔ ft.
Cooling System	Thermo-Siphon	Thermo-Siphon	Pump—Thermostatic Control
Capacity, fuel tank	13 gal.	13 gal.	21 gal.
Capacity, gasoline tank	3 gal.	⅞ gal.	1 gal.
Capacity, cooling system	13 gal.	7¼ gal.	10 gal.
Lubrication	Force Feed	Pump and Splash	Pump and Splash
Clutch	9 in., single plate	11 in., single plate	12 in., single plate
Steering	Worm, gear-enclosed	Worm, gear-enclosed	Worm, gear-enclosed
Drawbar, vertical adjustment	7½ in.	6¾ in.	6¾ in
Drawbar, horizontal adjustment	16 in.	** 46 in.	** 46 in.
Shipping Weight, approximately	2800 lb.	3950 lb.	5300 lb.

* 42 x 12 Optional. † Narrow Tread, 62⅝ and 73¾. ‡ Tractor on 40-in. Wheels. △ Over Steering Wheel. ** Narrow tread, 30 in.

For Complete Information on the FARMALL 14 and Machines, ask or write for F-14 Catalog

For lack of space in this catalog, the Farmall 14 and its quick-attachable machines are covered in a separate catalog which will be gladly supplied to anyone interested. Simply ask a McCormick-Deering dealer or mark and return the card included with this book.



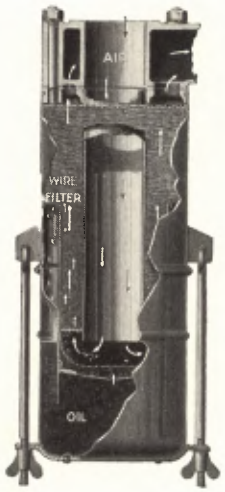
Illust. 5. The Farmall 14. The belt pulley is supplied at a slight additional cost.

Illust. 6. All McCormick-Deering tractor engines are equipped with removable cylinder sleeves as shown above. If a cylinder is scored through neglect or becomes worn after years of service it may be replaced easily and at reasonable cost.

Features that assure FARMALL economy and *Stamina*

REPLACEABLE cylinders are one of the examples of the extra quality built into McCormick-Deering Farmall tractors. They add to the cost to manufacture but they assure low maintenance cost and long tractor life.

When the original cylinders in one of these tractors become worn, brand new cylinders and pistons—exact duplicates of the originals—can be quickly and easily installed, thus making the power-producing part of the engine actually as good as new. Re-boring alters the original dimensions of the parts. Replacing cylinders and pistons that are worn returns these parts to their original dimensions. International Harvester knows the lasting value of this feature, having placed in users' hands probably more than a million engines with replaceable cylinders. That means a world of experience.

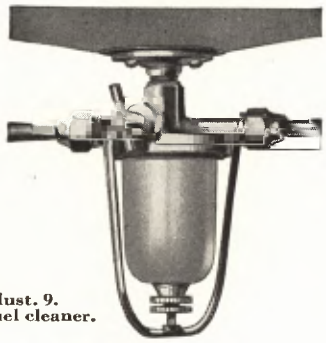


Illust. 7. The air cleaner removes all dust and other foreign substances from the air.

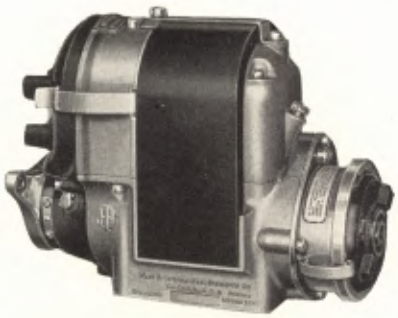
Air, Oil and Fuel Filters assure a clean-running and *Long-lived* Engine

The air, oil, and fuel that enter the Farmall engine are thoroughly filtered. The cleaning element of the oil filter is of the cleanable metal type and does not require replacement after a few weeks of service. *All* the crankcase oil is filtered.

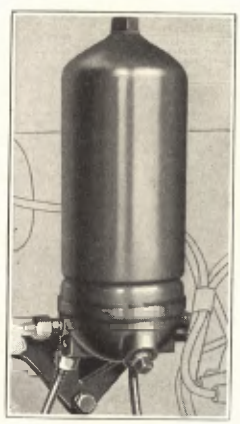
The filtering element in the air cleaner is wire wool. Air on its way to the carburetor passes through oil in the bottom of the air cleaner and up through the filtering element, maintaining a constant film of oil on the wire wool. This oil catches the dust in the air and carries it down to the oil compartment where it settles in the bottom. It is easy to remove the oil container to clean it and refill it with fresh oil. The fuel cleaner is shown in Illust. 9.



Illust. 9. The fuel cleaner.



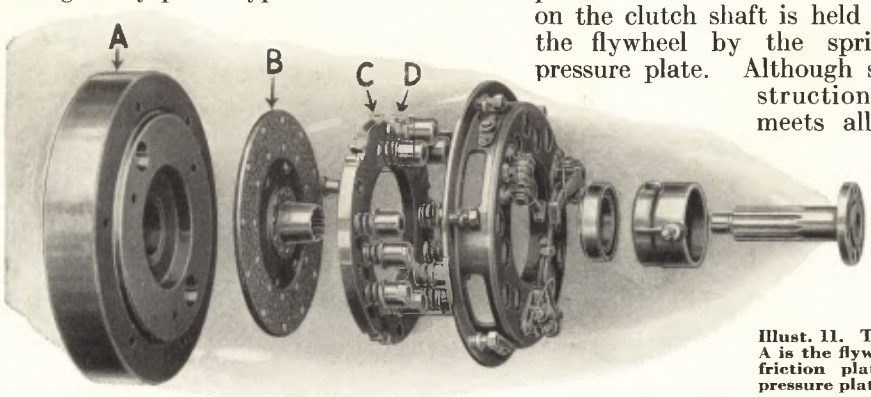
Illust. 10. The International high tension magneto with automatic impulse starter furnishes a good spark for starting as well as running.



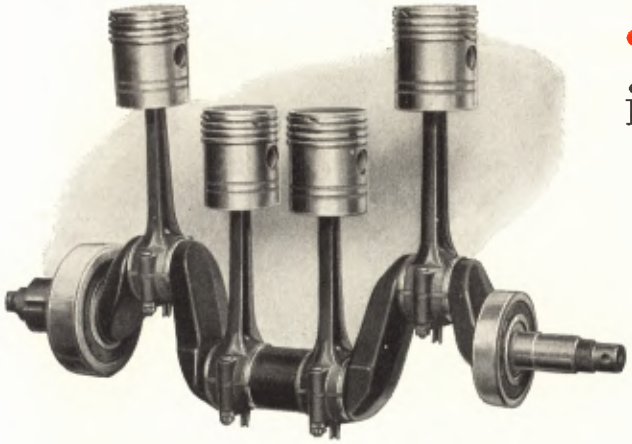
Illust. 8. The oil filter removes dirt, grit, and other foreign materials from the lubricating oil, thus conserving its lubricating qualities.

Large, Durable Clutch

The Farmall clutch is of the adjustable, single-dry-plate type. The one friction plate on the clutch shaft is held firmly against the flywheel by the spring-compressed pressure plate. Although simple in construction, this clutch meets all requirements and assures smooth application of power to drive wheels or belt.



Illust. 11. The Farmall clutch. A is the flywheel; B, the single friction plate; C, the spring pressure plate; and D, the pressure springs.



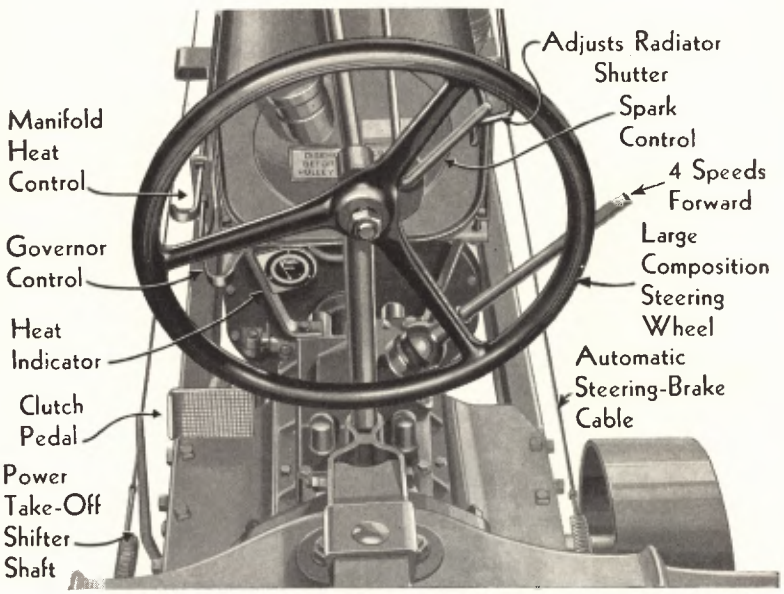
Illust. 12. This shows the ball-bearing crankshaft used in the F-20 tractor. The same type of shaft, but heavier, is used in the F-30.

33 Ball and Roller Bearings in Farmall 20

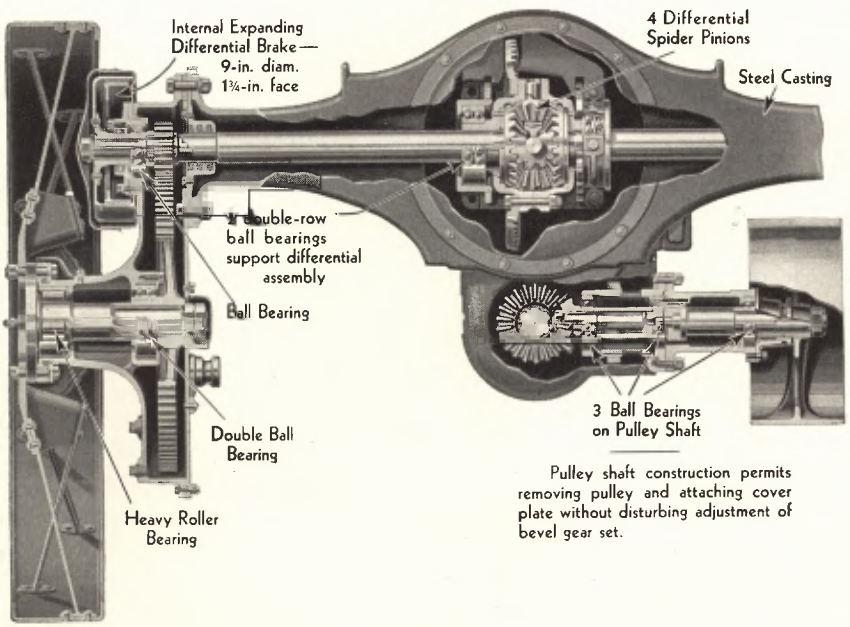
In the Farmall 20 there are 33 friction-reducing bearings, 25 of them husky ball bearings, the others roller bearings. That's practically twice as many bearings as you will find in any other all-purpose tractor except the F-12 and F-30 Farmalls; and that's one of the reasons you hear of so many old Farmalls that are still working and producing economical, trouble-free power. When you have a tractor in which power all the way from the front end of the crankshaft to the rear wheels flows smoothly on ball or roller bearings, you have a tractor in which power losses due to friction are reduced to the minimum. The Farmall is that kind of tractor.

All Controls in *Easy Reach*

Notice the illustration at the right—all the tractor controls within convenient reach of the operator. The large composition steering wheel gives instant control not only of steering but of braking either rear wheel automatically for a pivot turn to right or left. A new feature is the governor control which gives the advantage of a full throttle at engine speeds of 1000 to 1200 r.p.m. The best evidence of the easy handling of this tractor is the number of lads and even lassies who operate Farmalls.



Illust. 14. Looking over the seat of the Farmall 20 toward the front—all controls convenient to the operator. The heat indicator and adjustable radiator shutter, also the large composition steering wheel, are new features which have been added to the F-20 and F-30 tractors.


Internal Expanding Differential Brake—9-in. diam. 1¾-in. face
4 Differential Spider Pinions
Steel Casting
2 double-row ball bearings support differential assembly
Ball Bearing
Double Ball Bearing
Heavy Roller Bearing
3 Ball Bearings on Pulley Shaft

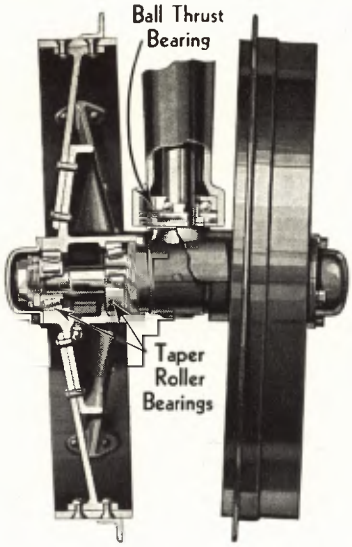
Pulley shaft construction permits removing pulley and attaching cover plate without disturbing adjustment of bevel gear set.

Illust. 13. Sectional view of the differential countershaft and final drive of the Farmall 20.

High Grade Final Drive

The Farmall differential has four spider gears and two side gears, two-piece forged case, hardened ground steel thrust washers between the side gears in the case. The differential is mounted on double-row ball bearings. All gears in the Farmall are of the finest chrome nickel. Special asbestos packings effectively seal the transmission and final drive against dirt and other abrasives. This final drive is high grade in every respect. The rear axle or countershaft housing is cast steel, not just ordinary iron.

Many *Good* Farmall Features you can't see ... they *Show up* in *added Years* of tractor life



Illust. 15. The front wheels of the Farmall 20 with one wheel and the bolster section cut away to show the high-grade construction of these parts. The construction in the F-30 is the same in principle.

THE nearest Farmall owner can tell you what the Farmall will do in the field, how many acres he can cultivate in a day, how easy the Farmall is to handle, how steady it is on the belt, and how little it costs to keep the Farmall going. But not all Farmall owners can tell you all that is back of the perfection of Farmall performance, or what it is that makes Farmalls last so long.

Yet the features back of the Farmall record are not secret. It's just that there are so many of them that are hidden inside the tractor. It's what these features add up to that makes a Farmall what it is.

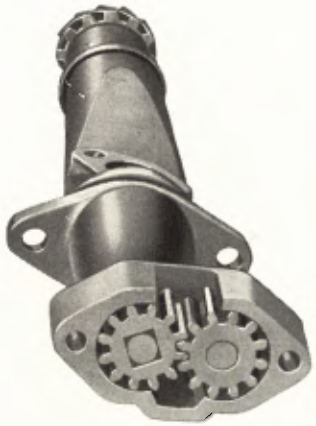
For instance, you can't see the thirty-three ball and roller bearings in a Farmall 20—that is, not without tearing the tractor down. If you could see them you still could not see the fine quality of steel and the precision of workmanship that went into those bearings, much less the rigid inspections they have to pass before they can get into a Farmall tractor.

You can't tell that the Farmall has a ball-bearing crankshaft just by looking at the outside, but you know it's got something from the way the engine operates and the ease with which it can be started.

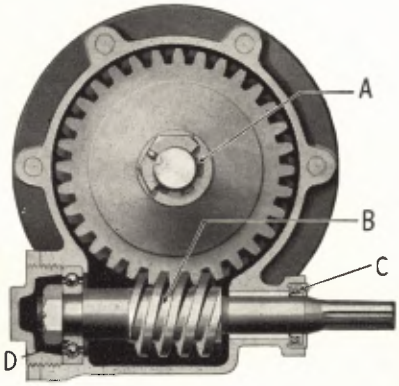
You can't see the removable cylinder sleeves nor the quality of the gears in the transmission and final drive.

The high quality steels used in the manufacture of the Farmall are made in the Harvester Company's own factories, where uniformity of product is under Harvester control. All working parts are turned, ground, or otherwise worked to such exact dimensions that it is necessary to have special equipment for measurement. The ideal balance of weight and power in the Farmall is something you cannot see, although you soon discover it in the field. You can't see the dust seals which keep oil in and dirt out, thus protecting the tractor against wear by dirt or grit.

There are many other features of Farmall construction, especially with reference to quality of materials, that you cannot see. You only know they are there because Farmall performance and Farmall stamina prove it. These features not only make for length of life but assure economical operation through elimination of friction, proper protection of working parts, and scientific utilization of the different grades of fuel. To be sure of quality in the tractor you buy, be sure that there is a record for quality back of it.

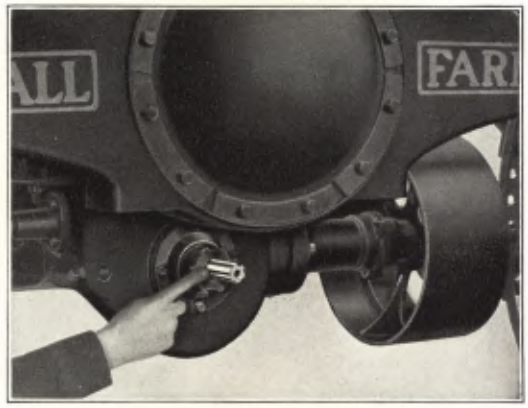


Illust. 16. The Farmall 20 oil pump. It extends down into the oil sump and pumps oil through the oil filter directly to connecting-rod dips and to the governor and cam shaft bearings.



Illust. 17. The steering worm and worm wheel. A shows the splined end of the bolster shaft. When the teeth engaging the worm become worn the worm wheel can be turned on the shaft to engage unworn teeth, thus multiplying the life of the worm wheel. B is the irreversible steering worm which makes the Farmall steering wheel so easy on the operator's arms. C is a rawhide spring-loaded oil seal, the best device ever made for keeping oil in and dirt out. D is the ball bearings at the end of the steering shaft and which is one of the reasons for the quick response of the steering wheel.

Illust. 18. There are three bearing cages in the Farmall transmission. Here we see the countershaft with bearing cage removed, allowing the shaft and its gears to be raised out of the transmission case.



Illust. 19. The power take-off which is a regular feature on all Farmall tractors. Note that it is located most conveniently with relation to the various machines the mechanisms of which are driven by the power take-off.

Special Equipment can be supplied to adapt the Farmall to special needs or conditions

FARMALL tractors are equipped regularly to meet conditions on the majority of row-crop farms. However, there are special conditions in parts of the world where different wheel equipment, for instance, may be desirable. And there are special power requirements in some cases that call for different equipment than that regularly supplied. Special attachments and equipment have been made available so that the Farmall purchaser can have exactly the equipment he needs to fit his particular case.

When wet weather holds back spring work it is sometimes desirable to operate the tractor at night and, of course, it is necessary to have light. The electric lighting attachments shown in Illust. 23 enable the Farmall owner to work his tractor after hours and get seedbeds ready for planting at the right time. The Farmall never gets tired and a few hours overtime in a busy planting season may mean many additional dollars at harvest time.

Sometimes it is desirable to have a swinging hitch when pulling harrows or similar machines in order to let the implement trail the tractor without undue side pressure on the disks. For sidehill work an adjustable hitch may be the thing. We have them, also a tractor stop-hitch which automatically throws the tractor clutch out when a plow hits an obstacle, and can be recoupled by backing the tractor.

Illust. 20 shows the new demountable rim wheel for F-20 tractors. There are also special front wheels for the F-20 and F-30 for sections where listers are used, which can be set to the regular tread or set wide to straddle tops of ridges.

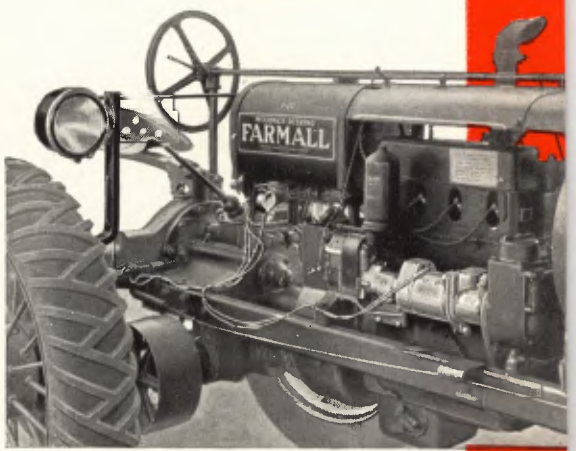
Among other special attachments and equipment available are high-speed attachment for pneumatic-tired tractors, 5,000 and 8,000-foot altitude pistons, front wheel mud scrapers, rear wheel fenders, rubber upholstered seat, road rings to use when transporting steel-wheeled tractors over highways, adjustable over-tires for steel-wheeled tractors to give different widths of tread, power-lift attachment, extension rims, special belt pulleys, etc.

If you don't see the equipment you want in this catalog, consult the nearest McCormick-Deering tractor dealer.

Illust. 20. One of the new Farmall 20 adjustable tread rear wheels with 9.00-36 tires. Wheel treads of 68 to 96 inches can be had with these wheels. The rims are demountable. They are of the semi-drop-center type with loose side rings.

Illust. 21. The power-lift attachment which can be supplied for F-20 and F-30 tractors, either single or double lift.

Illust. 22. This rubber upholstered seat can be supplied at slight additional cost. It is cushioned with sponge rubber and very comfortable.



Illust. 23. The no-battery electric lighting attachment available for Farmall 20 and 30 tractors. It includes both right and left-hand headlights, generator, switch, and necessary wiring and attaching parts.

Illust. 24. Regular F-20 40 x 6-in. wheels with 8-in. adjustable overtire with riveted spade lugs. Also available for F-30.

Illust. 25. The single-rim rear wheel with regular angle lugs—No. 16499-D covers one pair with lugs.

Illust. 26. The 42 x 4-in. angle-rim rear wheel with overhanging lugs.

Illust. 27. The 42 x 4-in. angle-rim rear wheel with 8-in. adjustable overtire and 5-in. spade lugs.

Illust. 28. The 42 x 2-in. channel-rim rear wheel with lugs. Also supplied in 47-in. diameter.

Illust. 29. The 42 x 2-in. channel-rim wheel with meadow band. Road bands similar to this but high enough to carry the tractor off the lugs can be supplied.

Fast Work, Deep, Mellow Seed Beds *on Time* when you have FARMALL POWER

WHAT mystery there is in a tiny seed! A mustard seed which may lie dormant for years has, locked in its little hull, all those characteristics necessary to produce a plant that will be like all the other mustard plants that have gone before—the same kind of stalk, the same leaves, flowers, and seed, even the same pungency and fire which make mustard seed so popular for hot dogs and sore backs. Even the time when the mustard plant will begin to ripen is already settled by some mysterious quality locked up in that tiny hull.

Every farmer knows that whether corn is planted the middle of May or the middle of July it will do its best, when the days reach a certain length in the fall, to ripen and produce the seed that will in turn produce its kind. But the early planting, having the advantage of the full growing season, produces full ears, while the late planting produces nubbins.

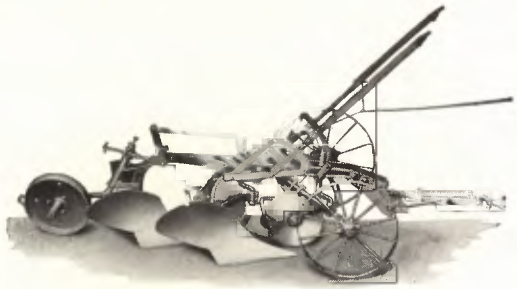
The same is true of other plants; tied up in the seed, born in the plant, is that natural urge to ripen at a given time.

The Farmall owner has control of the time of planting. Even in late seasons he is able to get his acres plowed, harrowed, and pulverized on time. If necessary, he works the tractor overtime and the tractor doesn't care.

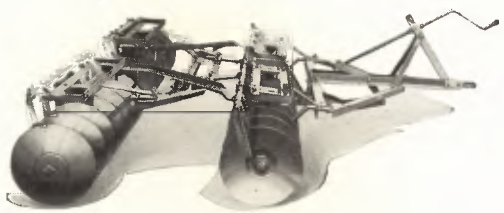
It is a thought worth remembering that the designers of McCormick-Deering plows and other tillage implements for use with tractors always have McCormick-Deering tractors in mind and for that reason McCormick-Deering machines fit McCormick-Deering tractors and work with them better than any other make of machines.

Faster tractor travel, and the greater capacity of tractor implements, doubles and triples the amount of work a man can get done in a given time. This means not only greater speed but greater profits due to lower production costs.

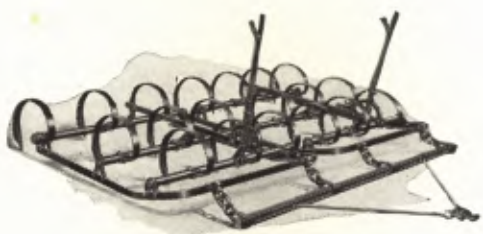
There is not room in this catalog to show the different McCormick-Deering implements but catalogs will be gladly supplied. If you are interested in any implement, you can either see a McCormick-Deering dealer or mark and return the card in the back of this catalog.



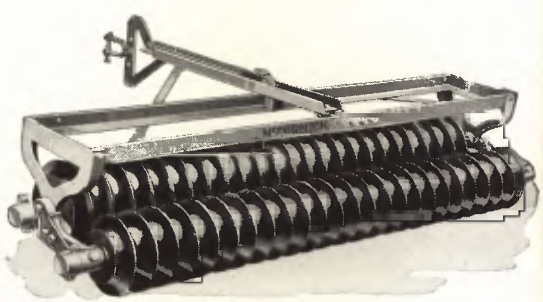
Illust. 30. Little Genius plows are well adapted to use with Farmall tractors. They are built in one- to four-furrow sizes. Bottoms to suit any soil.



Illust. 31. McCormick-Deering 7-foot No. 10-A tractor disk harrow.



Illust. 32. McCormick-Deering spring-tooth harrows are built in sizes up to 15 feet in width.



Illust. 33. The McCormick-Deering double-gang soil pulverizers are also available in all standard sizes.

Illust. 34 (Below, left). Clifford Goodrich plowing with Farmall 20 and No. 8 Little Genius on his father's farm in southern Michigan. Illust. 35 (right). Disking and harrowing 25 to 30 acres a day with Farmall 20 on the Clyde E. Shorey farm near Dixon, Ill.

The Farmall *2-Way Plow* for Irrigated and Hilly Fields

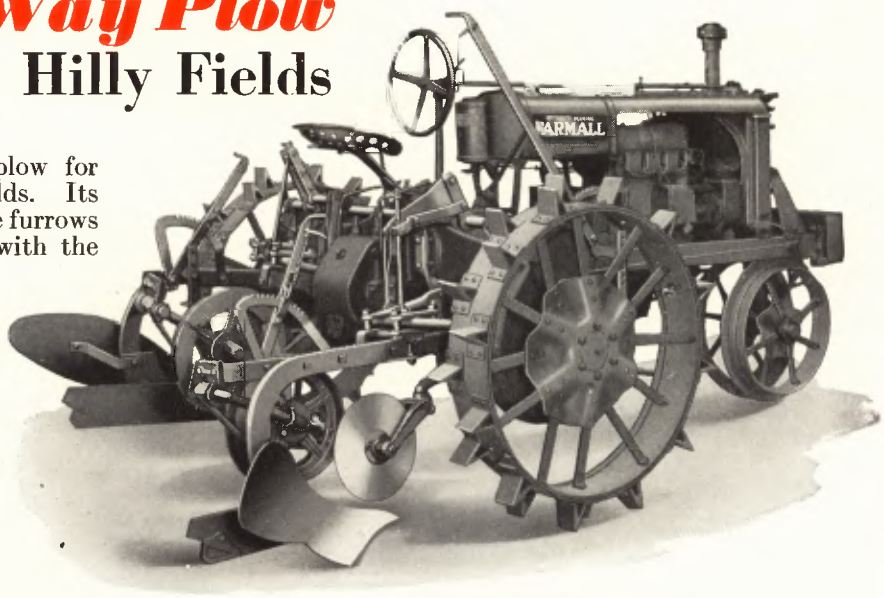
THE Farmall Two-Way is the plow for irrigated fields and for hilly fields. Its exactly matched bottoms make the furrows look like they have all been turned with the same bottom—the man who has never seen a two-way plow work might wonder why there are no back or dead furrows. In hillside work, turning the furrows all down the hill instead of trying to throw half of them uphill makes plowing a whole lot easier job.

The Farmall two-way plow is a power-lift plow, so the tractor has to be equipped with power-lift attachment. This makes a combination that anyone can handle easily.

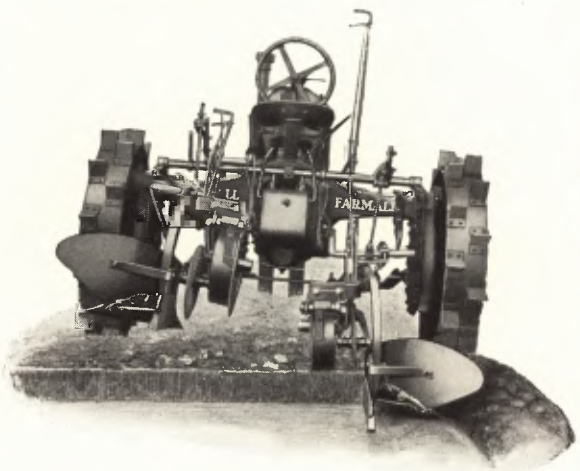
One of the outstanding features is ample clearance under the beam, when the plow is at work, and under the bottoms when the plows are raised. Owing to the compactness of the plow, it is easy to turn in close quarters. The plows are built for hard work, such as plowing deep in alfalfa sod or stiff and hard soil.

The plow is usually equipped with 16-inch bottoms. Gauge wheels hold the plow to uniform depth. Beams are extra heavy and the whole plow is well on the sturdy side.

There is a choice of different types of bottoms. Equipment includes hard steel shares and plain rolling coulters. Other equipment—different types of shares, combination coulters and jointers, etc.—can be supplied.



Illust. 36. The Farmall No. 88 Two-Way plow. It can be supplied for both F-20 and F-30 Farmalls, wide and narrow tread.

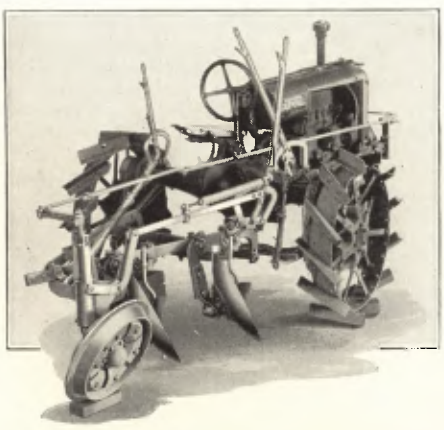


Illust. 37. This is a rear view of the plow with soil drawn in to show how the gauge wheel regulates the depth of the furrow. Note that the left bottom has swung to the left out of the way. The right-hand bottom swings to the right when the left-hand bottom is working.

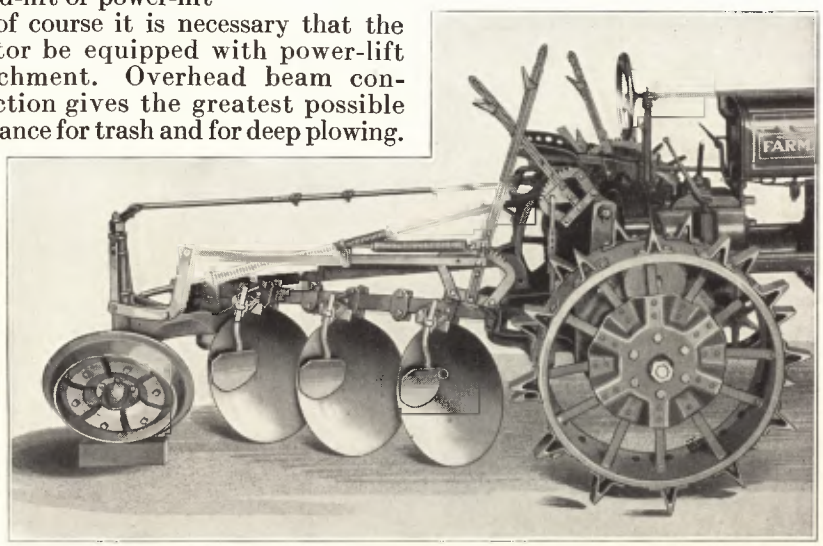
Farmall *Disk Plows*

ANOTHER plow for direct connection to the Farmall, either F-20 or F-30, is the Farmall disk plow. It is built in two and three-disk sizes, with 26-inch disks regularly supplied. The two-disk plow cuts 9, 10, or 11-inch furrows, the three-disk 8 or 9-inch furrows. Scrapers are of the mold-board type. Oscillating scrapers can be supplied.

These plows can be supplied in either hand-lift or power-lift type. When the power-lift plow is used, of course it is necessary that the tractor be equipped with power-lift attachment. Overhead beam construction gives the greatest possible clearance for trash and for deep plowing.



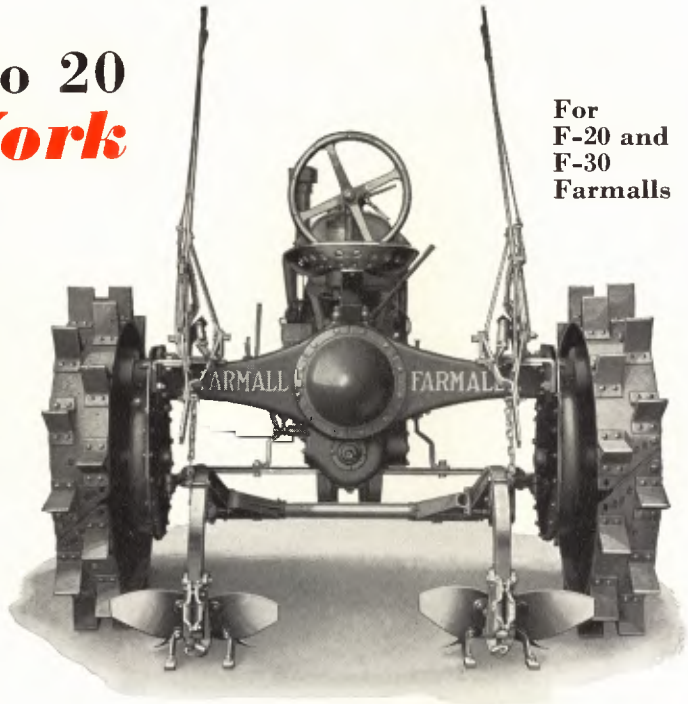
Illust. 38. The plow shown here is the No. 47 disk. Note that it is a single-wheel plow, the front end being carried on the rear of the tractor. The control rod extending to the shifting arm on the front of the tractor controls the action of the rear furrow wheel.



Illust. 39. This is the No. 48 three-furrow Farmall disk plow. The disks on both the Nos. 47 and 48 have roller bearings. Sand rims can be supplied for the rear furrow wheel to keep the plow from going too deep in sandy land.

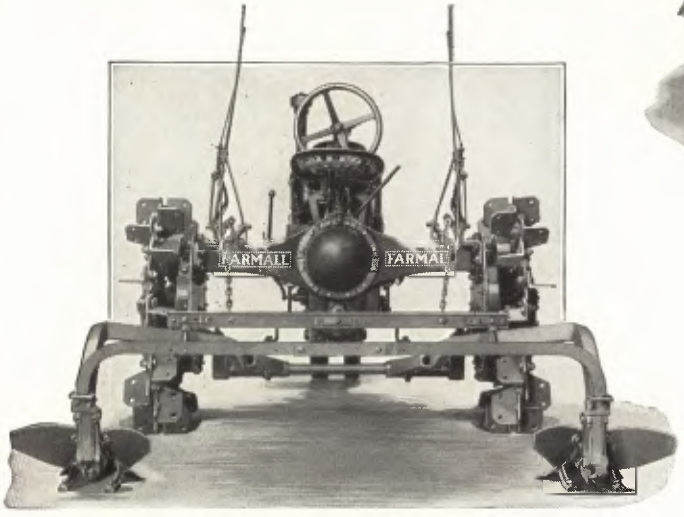
Bursting Middles—18 to 20 Acres a Day—*Easy Work* with a FARMALL

MANY thousands of these Farmall middle busters are working in the fields of the South and Southwest. They make, when attached to the F-20 or F-30, a compact outfit that is mighty easy to handle. The beams are quite long, and the bottoms work independently of the tractor, thus assuring uniform depth of work. Pressure springs can be supplied to put additional pressure on the bottoms to give penetration when the ground is unusually hard. One of the reasons for the popularity of the implement is the simplicity of it, which makes it possible to manufacture a first-grade implement at a comparatively low price.



For F-20 and F-30 Farmalls

Illust. 40. The Farmall No. 3 middle buster, hand-lift type. It is also built in power-lift type for use with F-20 and F-30 tractors when equipped with power-lift attachment.



Illust. 41. The No. 4 Farmall middle buster. It is especially designed for skip-row bursting or re-listing or working over or building up beds.

Another reason for the popularity of these Farmall busters is their adaptability to different kinds of work. This applies especially to the No. 3 straight-beam buster, for which planting attachments are available. One of these attachments is adapted to planting either cotton or corn, while the other is equipped with regular corn hoppers which use flat, edge, or whole-hill-drop plates. Both attachments can be supplied with plates for Kaffir corn, milo maize, etc.

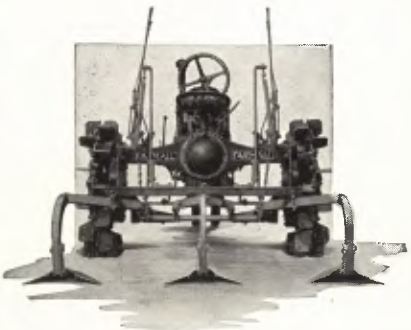
The No. 4 buster is a modification of the No. 3, the beams being offset to put two full row-widths between the bottoms. It is used as a two-row buster or, by adding the center-beam attachment, can be used as a three-row buster.

The regular 14-inch middle-buster bottoms have hard steel molds and solid steel shares. Lister bottoms with hard or solid steel molds and solid steel shares can be supplied on special order. Other bottom equipment is available, including bottoms with 18-, 20-, and 22-inch shares. Equipment also available includes bedding sweeps, rolling coulters, marker attachment, and spring-trip attachment.

The McCormick-Deering dealer in the sections where these implements are used will be glad to show you the machines and tell you all about them.

Lister-Drill Attachment

Illust. 42. This lister-drill attachment can be supplied for Nos. 3 and 4 Farmall middle busters. One of these units is attached to each beam.



Illust. 43. The No. 4 middle buster with center-beam attachment and sweeps.

Illust. 44 (Left). The No. 3 Farmall buster equipped with cotton planting attachment. A similar attachment with corn hoppers can be supplied. These attachments are also adapted to planting various feed crops.

Illust. 45. Skid attachments like these can be supplied for Nos. 3 and 4 Farmall middle busters.

Two *New* Middle Busters for F-20 and F-30 Tractors

No. 7 *Push Type*
No. 8 *Long Beam*

HERE are two new Farmall busters which are rapidly winning the approval of cotton growers in the South and Southwest. One is the No. 7 push-type buster, built in two- and three-row, and the other the No. 8 two-furrow, a buster with extra long beams.

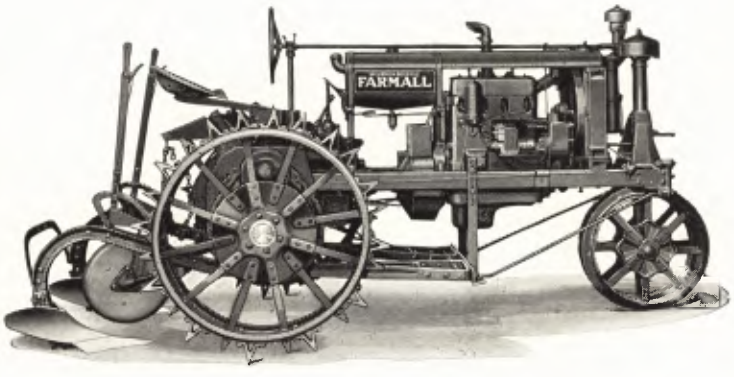
On the No. 7 the two front bottoms are located ahead of the tractor drive wheels with two full-row widths between them. The tractor drive wheels run in the furrows made by these bottoms and therefore always have good traction. This buster builds exceptionally uniform beds. On the three-row the center bottom is attached to the rear of the tractor.

The No. 7 is regularly equipped with 14-inch middle-buster bottoms. The equipment which can be supplied to meet special conditions includes plain or notched rolling coulters, disk attachment, spring-trip attachment, etc.

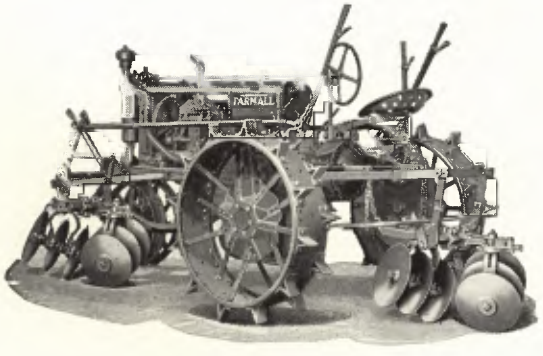
Illust. 46. This shows the No. 7 middle buster at work. Note that the front bottoms travel in front of the tractor drive wheels.

Illust. 47. The Farmall No. 7 three-row push-type middle buster. This size is popular for use with F-30 tractors. The two-row is more popular for the F-20 and for use as a skip-row buster.

The long beams on the No. 8 middle buster place the bottoms far enough back to permit setting the tractor drive wheels so that they will not run on any of the dirt turned up from previously made furrows. This assures uniform height of beds. The depth of the bottoms is controlled by gauge wheels. The beams are held to their proper row width by means of a double hobble on the rear end. This hobble also holds the bottoms level and prevents twisting strains on the front ends of the beams. The long hitch assures good penetration and steady operation.

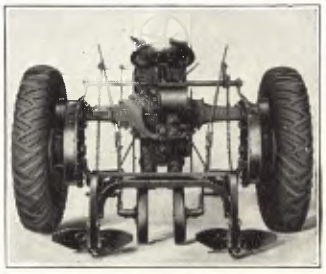


Illust. 48. The Farmall No. 8 long-beam middle buster.



Illust. 49. The No. 7 middle buster with front and rear disk attachments used for cleaning up beds and killing weed growths before planting.

The No. 8 is equipped with 14-inch high-speed middle-buster bottoms. Equipment available on special order includes different types of bottoms, spring-trip beams, plain or notched rolling coulters, etc.



Illust. 50. A rear view of the No. 8 Farmall buster.

Farmall TOOL-BAR Machines

Illust. 51. This man with his Farmall and No. 10 tool-bar middle buster will get over 18 or 20 acres a day.

WHEREVER middle bursting is the first operation in the preparation of soil, one of these Farmall tool-bar middle busters makes a basic implement for just about everything a man has to do up to picking time—bursting middles, sweeping out old beds, planting, listing, etc. For the backbone of these busters is a heavy, square, steel bar to which can be attached middle buster or lister bottoms, sweeps, planting attachments, etc. This bar is connected to the tractor by long pull irons which attach to brackets extending down from about the middle of the tractor frame rails. It is carried on wheels, and these control the working depth of the various attachments.

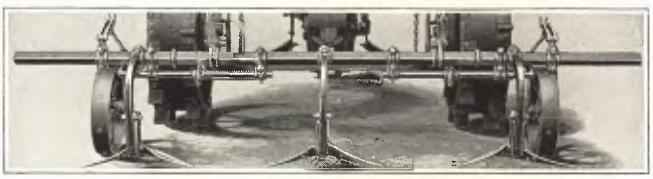
The No. 10 is primarily a two-row, though three or four bottoms can be used where draft conditions permit. The No. 11 is a combination three- and four-row lister. It is of still huskier construction than the No. 10 and plenty strong to be used with the F-30 in hard ground. While it can also be used with the F-20, it is not recommended for that tractor except where the soil is light and easily worked.

These machines are of the power-lift type and it is necessary that the tractors be equipped with power-lift attachment.

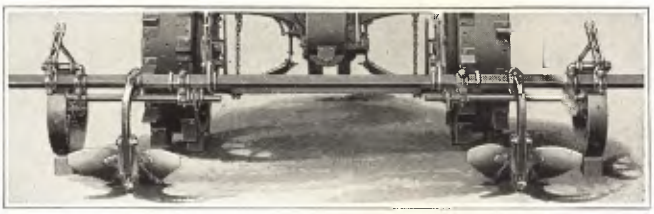
The No. 10 is regularly equipped with 14-inch middle-buster bottoms, the No. 11, with 14-inch lister bottoms. These bottoms have soft-center tempered steel molds and solid steel shares. Other bottoms can be supplied on special order, including bottoms with 18-, 20-, and 22-inch shares.

Planting attachments which can be supplied for these machines are described on the following page. You can even have a cultivating attachment to use on the tool-bar of the No. 10 and No. 11 machines in conjunction with the front section of your regular Farmall cultivator. It consists of five spring-trips with two 18-inch and three 10-inch sweeps. It makes a fine arrangement for cultivating skip-rows.

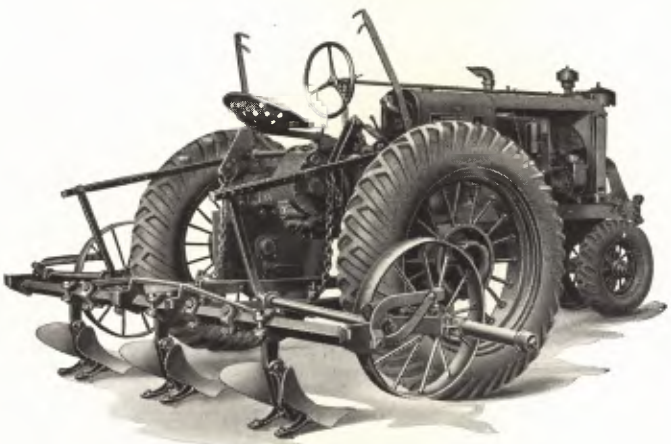
Other equipment which can be supplied includes extra beam attachments, cultivating attachment, spring trips instead of friction trips, special gauge wheels, attachments for using sweeps, and sweeps in various sizes.



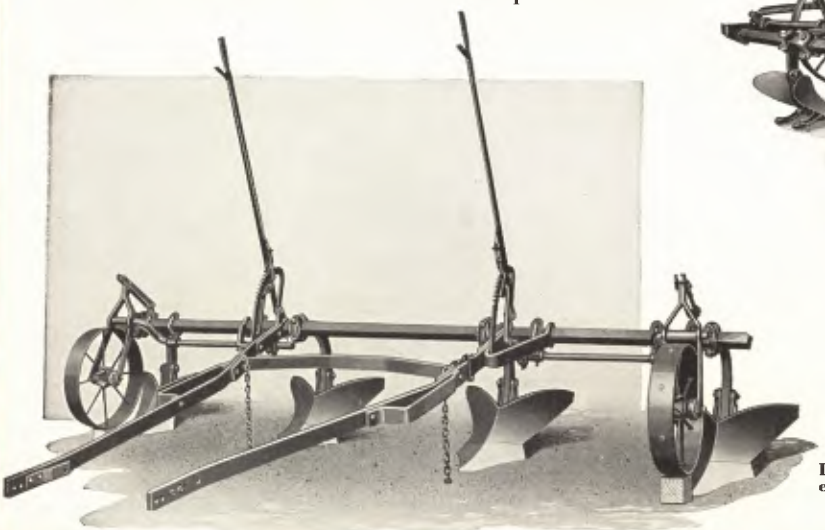
Illust. 52. The No. 10 tool-bar middle buster with extra beam attachment and sweeps, for center furrowing.



Illust. 53. No. 10 two-row buster with the bottoms set for alternate or skip-row bursting.



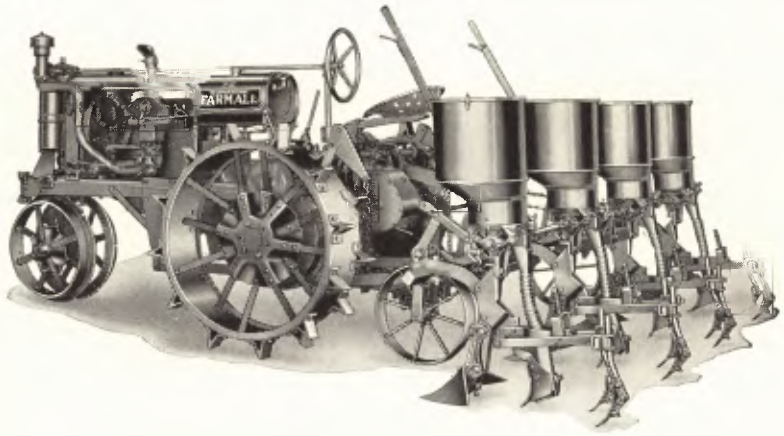
Illust. 54. The No. 11 three-row tool-bar lister.



Illust. 55 (Left). The No. 10 middle buster with two extra beams and bottoms for flat listing four rows at a time.

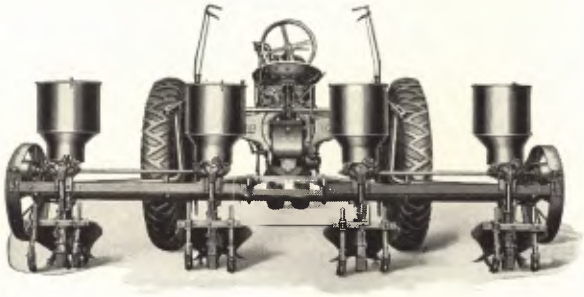
Farmall Tool-Bar Planters and Listers

THE planting and listing attachments which can be supplied for use with the F-20 and F-30 tractors cover all the requirements for planting cotton, corn, and the various feed crops grown in the sections where middle bursting and listing are practiced. These implements can be supplied either as implements complete in themselves or the planting units can be supplied as attachments for the middle buster and lister shown on the previous page.



Illust. 56. The No. 10-47 four-row tool-bar cotton and corn planter. It can also be supplied as a two-row. Spring-trip shovel coverers can be supplied, or disk coverers, press wheels, and other ground working equipment. No. 47 covers the four-row planting attachment for the No. 10 middle buster.

The No. 10-46 is a two-row cotton and corn planter with ground working equipment adapted to blackland. The No. 10-47 is a four-row planter with the same type of ground working equipment as the No. 10-46. The No. 10-48 is a two-row cotton and corn lister; the No. 10-49, a four-row cotton and corn lister. No. 10-50 is a cotton and corn lister-planter for working in loose ground; that is, ground previously tilled.

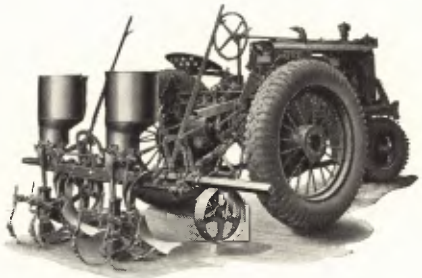


Illust. 57. No. 11-38 four-row tool-bar lister. Press-wheel and loose-ground lister attachments can be supplied.

Illust. 58. This shows the opening disks, runners, and press wheels which constitute the ground equipment for the No. 10-50 loose-ground lister-planter.

In these machines the seeding mechanism is driven from the tractor axle. The hoppers are of large capacity and do not require frequent refilling. The seeding mechanism is the well-known McCormick-Deering single-seed feed. Plates are supplied to meet all usual planting requirements and special plates are available. A corn cut-off and corn and Kaffir plates are supplied as part of the regular equipment.

The seeding mechanism on the No. 11 lister and loose-ground lister is driven by sprockets mounted on the axles of the wheels that carry the tool-bar. In other words, the seeding mechanism is ground-driven. The four-row lister-planter is No. 11-38; the four-row loose ground lister-planter is No. 11-39.



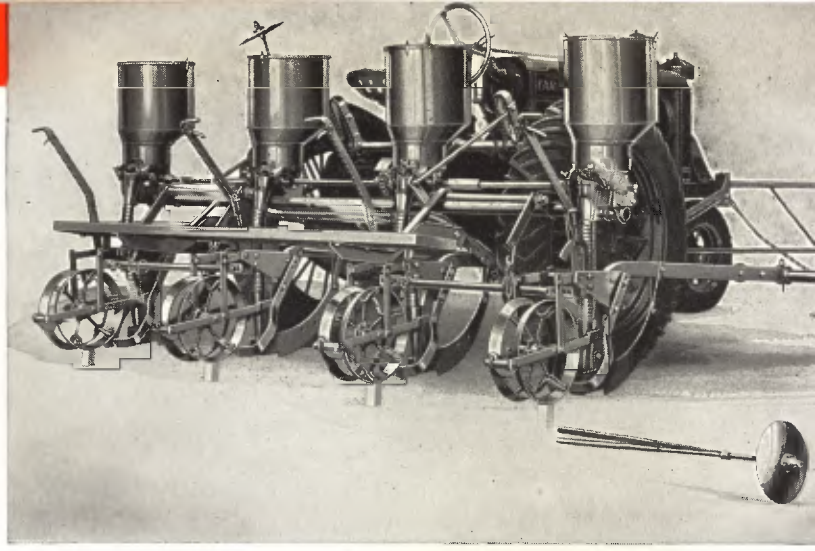
Illust. 59. The No. 10-48 two-row lister-planter.

From the foregoing you can readily see why these planters and listers cover such a wide range of requirements. In addition to the equipment shown, ground equipment can be supplied to meet conditions anywhere.

The McCormick-Deering dealer in the sections where these machines are used can tell you all about this special equipment. Remember that if you purchase one of these planters or listers you can readily convert it to a middle buster or flat-land lister by the addition of beams, bottoms, and other equipment shown on the preceding page.

Illust. 60. This man with his four-row tool-bar planter can put in 40 to 50 acres a day. He is using one of the No. 10-47 planters.

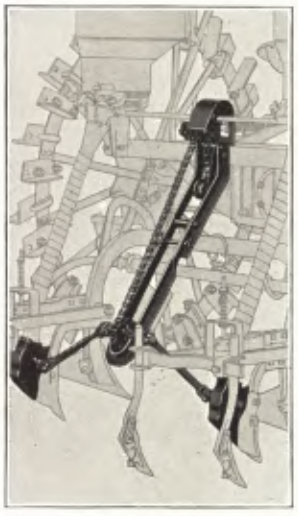
Farmall 2- and 4-row Cotton and Corn Planters



Illust. 61. A No. FA-57 four-row cotton and corn planter. No. F-56 is the two-row with the same type of ground equipment.

HERE are Farmall two- and four-row cotton and corn planters that can be variously equipped to meet conditions wherever cotton is grown. The cotton-seed feed is of the single-seed type. The planting range with regular plates is from 11 pounds to 2½ bushels per acre, and plates can be supplied for larger quantities. Each hopper is supplied with a corn cut-off and plates for planting corn and Kaffir. Plates can be supplied for many other seeds.

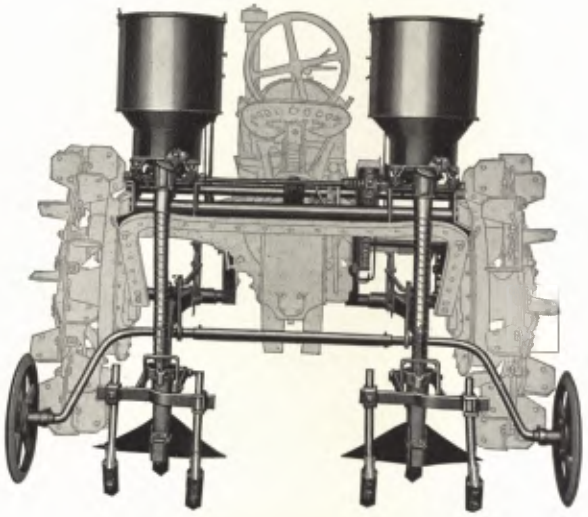
The No. F-56 two-row and the No. FA-57 four-row are equipped with runners and press wheels, as shown in Illust. 61. This is the type for planting in beds as is done in Mississippi, Arkansas, and other sections. The No. F-58 two-row and the No. FA-59 four-row are equipped with sweeps and covering shovels, as shown in Illust. 63. These are the planters for Texas and other sections where it is the practice to break down the beds at planting time and deposit the seed practically at soil level.



Illust. 62. This hill-drill attachment can be supplied on special order for No. F-58 planters. There is a hill-drill attachment for the F-56 which is driven by the press wheels.

The seeding mechanism is driven from the right tractor wheel by sprocket and chain. A slip clutch on the seed shaft protects the hopper mechanism should stones or other hard substances get mixed with the seed.

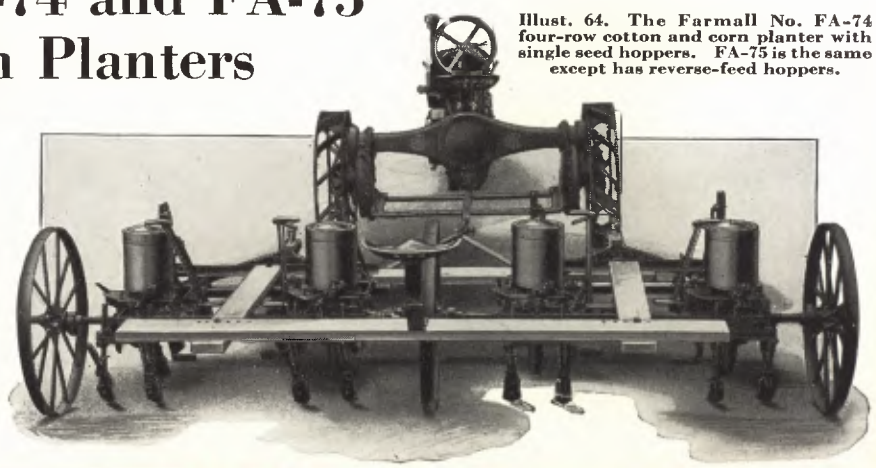
The two-row planters may be either hand lift or power lift. The four-row planters are power-lift type only. To use the power lift the tractor must be equipped with tractor power-lift attachment. Equipment available includes peanut attachment, combination corn-and-pea hoppers, marker attachment. Spring-trip shovel coverers can be supplied for F-58 and FA-59. Runner wings, dirt shields, and 12-inch middle-buster bottoms can be supplied for F-56 and FA-57.



Illust. 63. The No. F-58 two-row cotton and corn planter, end-lift type. It also can be supplied in power-lift type. The four-row planter with this same type of ground equipment is the FA-59.

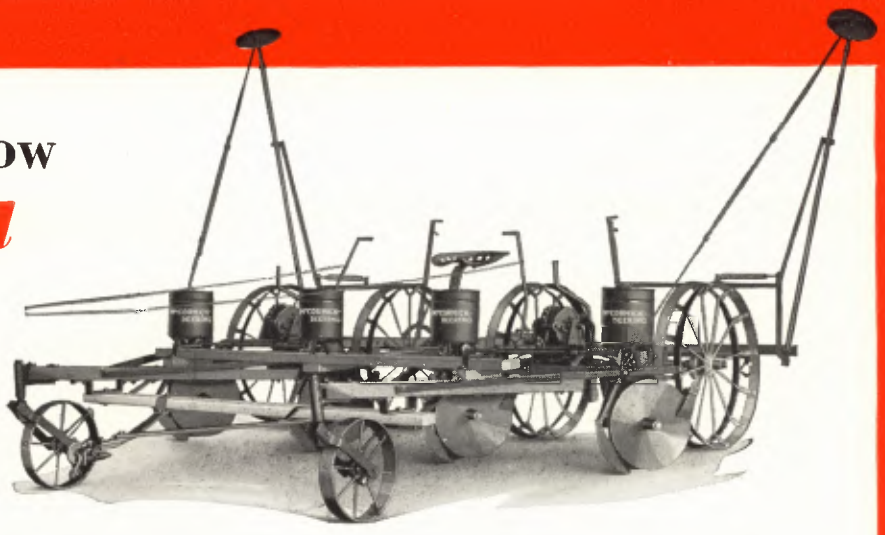
Farmall Nos. FA-74 and FA-75 4-Row Cotton Planters

Illust. 64. The Farmall No. FA-74 four-row cotton and corn planter with single seed hoppers. FA-75 is the same except has reverse-feed hoppers.



The four-row planter shown at the right has been a very popular planter in the South where a pull-behind planter is wanted. It can be supplied either with the single-seed type of mechanism, or the reverse-feed type in which the picker wheel, revolving in a direction opposite that of the agitator, effectively separates the seed. Both types of planters assure a uniform flow of seed to the soil, the single seed-type being more economical of seed.

Farmall 2- and 4-row *Loose-Ground* Lister Planters

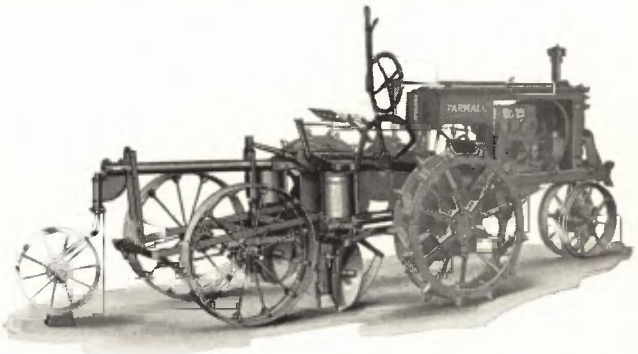


Illust. 65. Farmall four-row, power-lift, loose-ground cotton and corn lister-planter, FA-34. FA-134 is the same planter with flat-drop corn hoppers.

THE Farmall loose-ground lister planters are used for planting in lists in ground that has been previously worked, thus depositing the seed between beds of loose, well aired soil which absorbs the rainfall instead of permitting it to drain away.

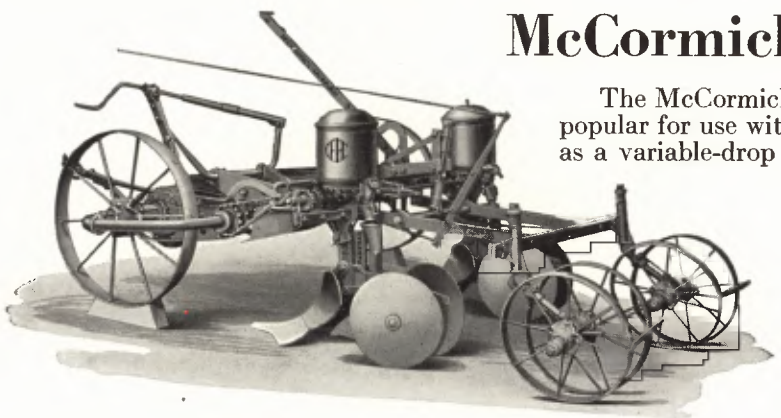
The two-row loose-ground lister planter is semi-direct-connected, the adjusting lever and supports being mounted on the rear of the tractor. The four-row is the pull-behind type of implement. Both the two- and four-row can be supplied either as combination cotton and corn planters or as flat-drop corn planters. The F-34 and the FA-34 are the two- and four-row cotton planters. The F-134 and the FA-134 are the two- and four-row flat-drop corn planters.

The cotton feed is the well-known McCormick-Deering reverse-feed type in which the picker wheel and agitator revolve in opposite directions, effectively separating the seed and assuring uniform planting. The corn feed is the flat-drop type. Any of these planters will also plant Kaffir, milo maize, broom corn and many other seeds, when equipped with plates which can be supplied. One Kaffir plate is supplied with each hopper.



Illust. 66. The Farmall No. F-34 two-row loose-ground lister. F-134 is the same lister equipped with flat-drop corn hoppers.

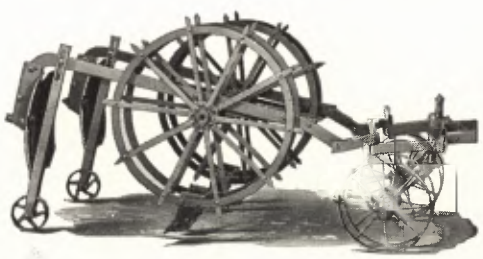
McCormick-Deering *Listers*



Illust. 67. The McCormick-Deering No. 151 two-row variable-drop corn lister. No. 152 is the same with cotton hoppers. These listers can also be supplied less planting attachments for listing wheat ground.

The McCormick-Deering two-row lister shown in Illust. 67 is popular for use with Farmall tractors. It can be supplied either as a variable-drop corn lister or as a cotton lister, or less plant equipment for listing wheat ground. The plates supplied cover the usual range and a wide selection of plates is available to meet special requirements.

The newest and probably the most effective way of conserving moisture is by the basin-listing method. Basin-lister attachments can be supplied for various McCormick-Deering listers and middle busters.



Illust. 68. The basin lister attachment which can be supplied for various listers and middle busters.

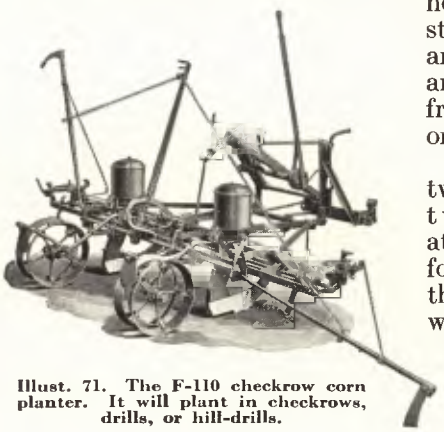
Illust. 69 (Left). Basin listing leaves dams across the lists, thus forming reservoirs to hold the water. This method not only conserves moisture but prevents erosion.

Farmall *Checkrow* Corn and Cotton Planters—Drills

Illust. 70. This shows the F-110 quick-attachable two-row corn planter for the F-20 tractor.

THE Farmall corn planters shown on this page have the same seeding mechanism as the well-known McCormick-Deering "100 Series" planters. The hoppers take flat-, edge-, or full-hill-drop plates, making it possible to use the type of plate that will give the greatest accuracy. This feature adapts them especially to planting hybrid seed corn. These planters make it possible to get crops into the ground quickly when the time is right. A two-row will plant from 15 to 25 acres a day, a four-row 40 to 50 acres a day.

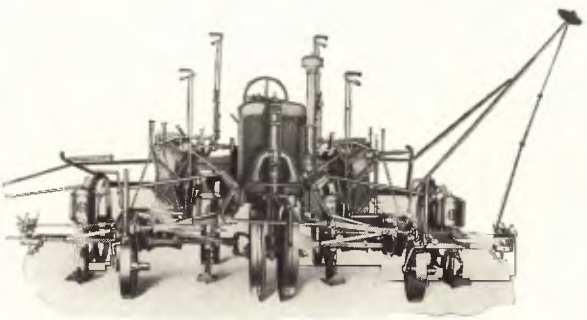
The two-row checkrow planter is the F-110. F-111 has the same hopper construction but is a straight drill. These planters are the quick-attachable type and can be attached or removed from the tractor in five minutes or less.



Illust. 71. The F-110 checkrow corn planter. It will plant in checkrows, drills, or hill-drills.

The four-row planters are of two types. The FA-122 has two two-row units, one attached directly to each side of the tractor. Each two-row unit is free to follow the ground independently of the other. A universal joint connecting the check shafts of the two two-row units assure that the four planting units will work in perfect unison. The four-row drill is No. FA-126.

FA-112 is a four-row checkrow planter of the pull-behind type. The four-row pull-behind drill is No. FA-116. The hoppers are the same as those used on the planters described above. Long levers projecting forward from the planter enable the operator to control the planter from the tractor seat.

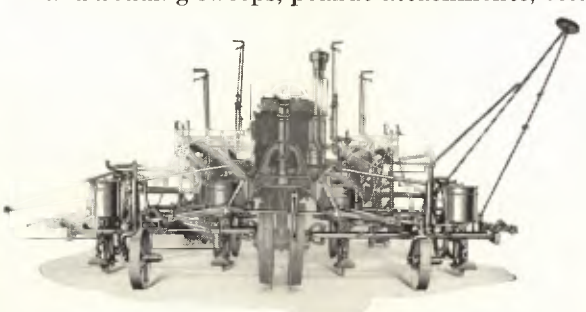


Illust. 72. The FA-122 four-row, direct-connected, checkrow corn planter for F-20 and F-30 tractors.

All the above planters are of the variable-drop type and regularly equipped with runner openers. The checkrow planters are equipped with check heads and 80 rods of wire. Fertilizer attachments can be supplied, also single or double-disk openers in place of runner openers. The direct-connected planters can be supplied either as hand-lift or power-lift planters. Combination corn and pea hoppers can be supplied in place of the regular hoppers.

A checkrow cotton planter similar to the FA-122 corn planter is FA-320. It can be supplied either with single-seed or reverse-feed type of hoppers. Single-seed planters are variable drop. Both types are equipped with corn cut-off and plates, and plates are available for planting Kaffir corn, milo maize, and other grain sorghums. No. FA-320-D is the four-row cotton and corn drill of the same type.

Equipment available on special order includes forecarriage, disk coverers, planting and bedding sweeps, peanut attachments, etc.



Illust. 73. The FA-320 checkrow cotton and corn planter for F-20 and F-30 tractors.

Illust. 74. This shows the four-row checkrow planter No. FA-112. This outfit will plant from 40 to 50 acres a day.

McCormick-Deering *Grain Drills*

TO use a McCormick-Deering grain drill is to make sure that every seed you plant reaches the right depth in the seed trench and is properly covered for speedy germination and quick growth. McCormick-Deering double-run and fluted-feed grain drills are built in plain and fertilizer types. The McCormick-Deering power-lift drill is an ideal seeding machine for use with Farmall tractors. It is easy to handle and efficient in operation. With the 28-6 drill shown in Illust. 76, pulled by a Farmall tractor, you can sow from 45 to 50 acres a day.

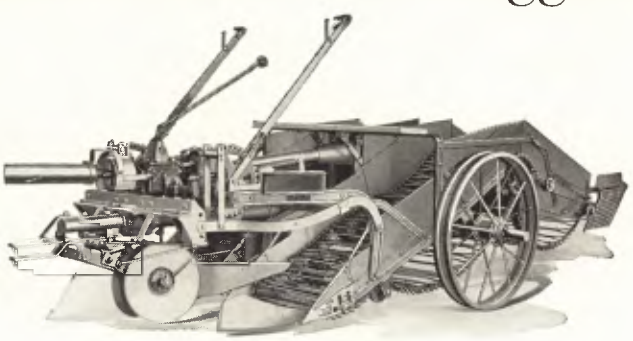
Illust. 75. Farmall 20 pulling a 16-marker drill near Frankfort, Ind. The operator and owner is Mr. Frank Galvin.

Illust. 76. McCormick-Deering 28-6 power-lift tractor drill with fluted feed, front delivery double-disk furrow openers, full-length footboard and all-steel, rust-resisting hopper.

The power-lift device is quite simple in action. A slight pull on the trip rope sets the lifting mechanism in operation, lowering the disks and automatically throwing the grain feed in gear at the same time. Another pull on the trip rope causes the disks to be raised and the grain feed is automatically thrown out of gear. These features, combined with light draft, positive and accurate feed, and the all-steel, rust-resisting hopper, will satisfy the most critical user of seeding equipment.

McCormick-Deering *Potato* Planters and Diggers

McCORMICK-DEERING potato planters handle cut and small whole seed with truly remarkable accuracy. Improved picker arms convey the seed, a piece at a time, to the discharge boot, which conveys it to the furrow. Features of these planters which you are sure to like are automatic control of flow of seed from the three-bushel hoppers to the seed chambers; short-coupled, compact, durable construction; unit control of furrow opener and covering disks; open seed chamber which enables operator to be sure at all times that everything is working properly. Seed can be planted 7 to 20 inches apart in rows 32 to 38 inches apart. The planters are made in one- and two-row sizes. They can be supplied either with or without fertilizer attachments. A spring-tooth covering device can be supplied in place of the disks for light covering.



Illust. 77. McCormick-Deering two-row power potato digger.

It's a real pleasure to watch a Farmall and one of these McCormick-Deering power diggers at work. The tractor has the power to drag the shovels clear down under the deepest spuds, and the digger can take it. As the crop rolls out in a steady stream of clean, whole, and unbruised spuds behind the digger, you can't help thinking what a snap potato harvest is with this combination of power and digger.

McCormick-Deering rod-link, power diggers are built in one- and two-row sizes, and equipped with power take-off connections for use with Farmall tractors. The nearest McCormick-Deering dealer can tell you all about the diggers and the equipment that can be supplied to meet conditions in your locality, or a catalog will be supplied gladly.

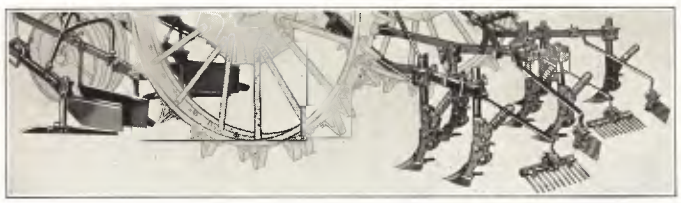
Illust. 78. This Aroostook County (Maine) potato grower makes fast work of planting with his Farmall and two-row fertilizer potato planter—15 to 20 acres a day.

Farmall No. 221-G
Shifting-Gang Cultivator

HERE is a new Farmall cultivator that has already become a prime favorite. Having both front and rear sections, it is complete in itself—does a finished job in the average field without any attachments whatever. It is especially adapted to cultivating checkrows, having the patented Farmall triple-control feature, by means of which the operator, just by turning the steering wheel, guides the tractor, shifts the gangs for double-quick dodge, and at the ends applies braking action to either rear wheel for a short pivot turn.

Illust. 79. Joseph L. Verdun, Jr., finds corn cultivation easy with the F-20 with the No. 221-G cultivator.

Illust. 80. The No. 221-G cultivator with four spear-point shovels and shields on the front gangs and seven spring trips with sweeps on the rear section.



Illust. 81. This surfare equipment converts the No. 221-G cultivator to a first-class surface cultivator, or the cultivator can be furnished originally as a surface cultivator under No. 221-S.

Almost any cultivator will do a good job working with the rows as planted. When it comes to cultivating across the rows, especially in rolling or hilly land, there is nothing like this shifting gang feature for doing a first-class job.

The No. 221-G can be supplied either as a hand or a power-lift cultivator. When the power lift is used the tractor of course must be equipped with power-lift attachment. The power-lift type is especially recommended since it not only makes the outfit extremely easy to operate but actually speeds up the work, thereby reducing the cost of cultivation. Another feature is high crop clearance.

This cultivator is mighty easy to use. There are only four shovels on the front section, one on each side of each row, and the operator always has a perfect view of his work.

The equipment shown in Illust. 80 is best adapted to the average corn belt farm; however, other shovels and other arrangements can be supplied, including a tool-bar attachment which converts the cultivator into a first-class beet and bean cultivator. Other available equipment includes disk hillers, rotary weeders, vine lifters, knife attachment, etc. Whatever your requirements, it will pay you to consult the nearest McCormick-Deering dealer.

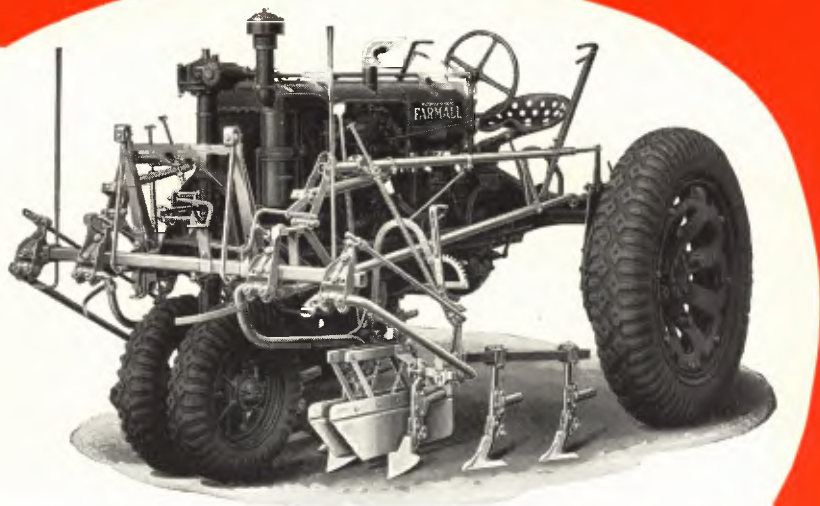
Illust. 83. Roland Newbill cultivating corn on the Vooris Larson farm near Knoxville, Ill. Mr. Newbill was well satisfied with the way the outfit handled in rolling land.

Illust. 82. One side of the parallel tool-bar attachment which can be supplied for the 221-G cultivator for cultivating 20 and 22-inch bean or beet rows.

Illust. 84. This shows special equipment which can be supplied for hilly land.

Farmall No. 229 *Pendulum Gang* Cultivator

SHOWN at the right is another new Farmall shifting gang cultivator that in one season has proved its right to a place in the Farmall line. In this cultivator the weight of the gang frame is suspended on two pendulums. The main frame pipe is connected with the cultivator shifting lever on the tractor front axle shaft. When the steering wheel is turned to guide the tractor, the whole gang structure is thus automatically shifted, giving a double-quick dodge. It's a mighty slick arrangement—you'll be surprised when you see how easy it is to handle in the cross rows.



Illust. 85. No. 229 Farmall cultivator for F-20 and F-30 tractors. It can be attached or detached in 6 to 8 minutes. The lever-type jockey arch costs a little extra. The regular jockey arch is bolted type.

Illust. 86. Cultivating with the No. 229 cultivator in an Illinois field. This cultivator is available in either hand or power lift. It has every adjustment for doing a quick, thorough job.

Another feature of this No. 229 cultivator is the parallel lift of the gangs—no matter what depth you work the shovels they are always at the right working angle and when the gangs are raised the shovels are all the same height from the ground.

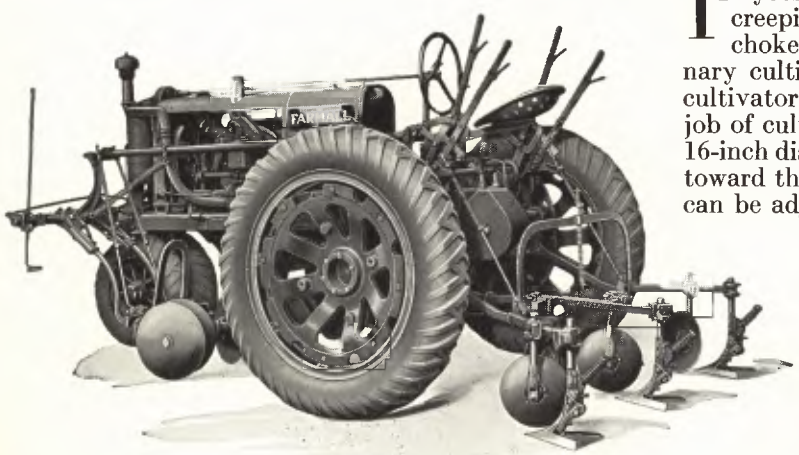
The McCormick-Deering dealer can tell you all about this cultivator and the equipment suited to your locality.

Illust. 87. This shows the No. 229 cultivator in a Pennsylvania potato field. In this case the cultivator is equipped with a rear track sweep attachment. This cultivator is proving quite a favorite among potato growers.

No. 228-G Farmall *Disk* Cultivator

IF your fields are infested with morning-glories, creeping Jenny, or other pestiferous vines that choke the crop and make the gangs on the ordinary cultivator look like a Christmas tree, here's a cultivator that will destroy the vines and do a clean job of cultivating. Each front gang has two pairs of 16-inch disks. These disks can be set to throw the dirt toward the plants or away, and the angle of the disks can be adjusted to suit conditions. The rear section of the cultivator carries four 13-inch disk hillers and three spring trips with sweeps or shovels. This rear section cleans out the centers and works the wheel tracks.

On special order 12-inch disk hillers with offset shanks can be supplied for the front section and three straight shank disk hillers can be supplied for the rear section to use in place of the spring trips. The cultivator can be supplied in either hand or power-lift type. To use the power-lift cultivator it is necessary that the tractor be equipped with the tractor power-lift attachment.



Illust. 88. The No. 228-G Farmall disk cultivator for F-20 and F-30 tractors.

A Favorite *Potato* Cultivator—No. 203-A

THE Farmall No. 203-A cultivator can be used in rows as narrow as 34 inches (28 inches for N-203-A), which accounts in part for its popularity with potato growers. It can also be used in standard corn rows up to 42 inches apart, so that the man who grows both corn and potatoes finds this cultivator well adapted to his requirements. To use this wide range of adjustment the regular F-20 with steel wheels should be equipped with adjustable overtires or the adjustable wheels should be used if the tractor is on rubber.

Illust. 89. Cultivating potatoes with the Farmall and No. 203-A cultivator on the Bonnymeade Farm, Lubing County, Ohio.

Illust. 90. The No. 203-A Farmall cultivator on the F-20 tractor. It can be supplied also for the F-30 and for the narrow-tread Farmalls. The vine lifters are not a part of the cultivator but available as tractor attachments.

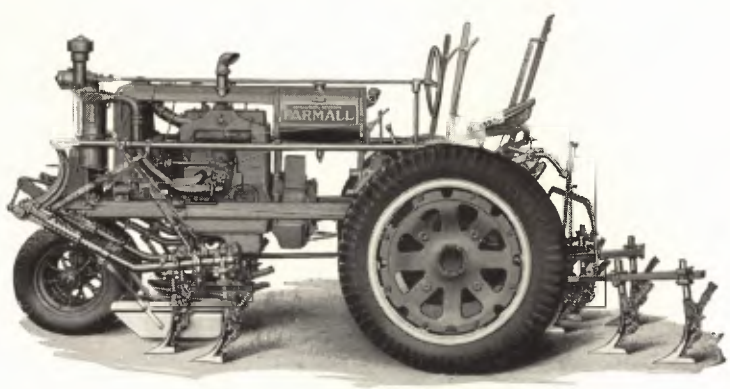
On this cultivator the front gangs are attached to a heavy pipe extending across the tractor just under the frame and just back of the front wheel. This makes very compact construction and an outfit that is easy to handle in narrow rows and in small or odd-shaped fields.

The No. 203-A is considered regular with two spring-trips with shovels and double-spring teeth on each front pair of gangs and seven double-spring teeth on the rear for 34-inch rows and up. Other combinations are available to suit requirements. It can be supplied as a hand-lift or as a power-lift cultivator.

When this cultivator is used in potatoes it is the usual thing to equip the tractor with vine lifters, as shown in Illust. 90. While they cost a little extra, they protect the vines and are especially valuable in later cultivations.

A *Stout* Cultivator for *Tough Going,* No. 210-G

CORN and cotton growers who have to contend with hard or stubborn soil conditions like this No. 210-G cultivator. It is built to do a good job in hard ground, and stand up to it. The beams are heavy steel pipe, and adjustable pressure springs put the shovels down where you want them to go, while spring-trips in front and double-spring teeth in the rear prevent breaking the shovels or sweeps used. To take advantage of the full range of the cultivator as to row widths, steel-wheel tractors should be equipped with adjustable overtires, or rubber-tired tractors with adjustable wheels.



Illust. 91. The Farmall No. 210-G two-row cultivator. Other shovel arrangements are possible. This cultivator is built for hard work.

The No. 210-G is considered regular with six spring-trips in front and seven double-spring teeth in the rear. Shovel equipment is optional. Equipment available includes rotary weeders, rotary shields, disk hillers, bean harvester attachment, moldboard hillers, etc.

Illust. 92. This shows E. C. Clayborn, Knox City, Texas, cultivating a feed crop with the No. 203-A cultivator.

Farmall No. 420-G *4-Row* Cultivator

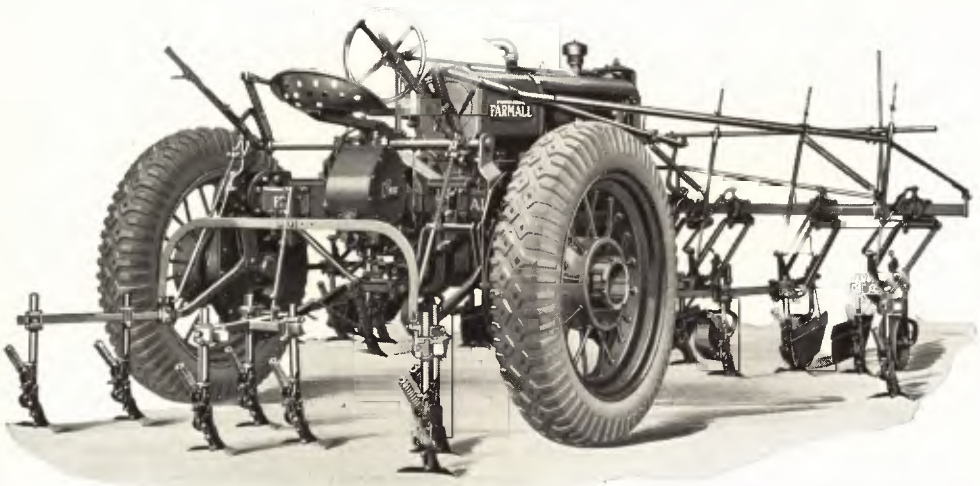
Illust. 93. Mr. E. R. Shaw, whose farm is near Oneida, Ill., raises large acreages of corn and soybeans. The corn is cultivated with the No. 420-G cultivator, the beans with the No. 624-G. He is quite enthusiastic about both cultivators.

FORTY acres is an easy day's work with one of these Farmall No. 420-G cultivators even in first cultivation, and in later cultivations most users will cover 60 acres in a day. For one man that's quite a lot of work out of the way.

It is a big cultivator adapted to work either in level or bedded crops. It takes only a few minutes to attach it to the tractor or to remove it.

The front gangs are of the parallel-lift type; regardless of the depth to which you set the shovels they are always at the correct working angle. In the raised position the gangs are level, too, and with unusual clearance. The front gangs are attached to a heavy square steel pipe which extends across the front of the tractor frame close to the tractor. This pipe is trussed in front and above, the construction being extra sturdy, yet not so heavy as to place too much weight on the front wheels of the tractor.

The 420-G is a power-lift cultivator, so it is necessary that the tractor be equipped with power-lift attachment. The power-lift cultivator can be either single or double lift. In the single lift the front and rear gangs are raised as a unit. In the double lift the front gangs are raised first and the rear gangs left in to cultivate to the point where the front gangs came out.



Illust. 94. The Farmall No. 420-G four-row cultivator, single-power-lift type, for F-20 and F-30 tractors. It can be variously equipped to meet the requirements of the different sections.

The greater number of these cultivators go out with the equipment shown in Illust. 94; that is with 12 spring-trips and 6 gauge wheels and shields in front and 7 spring-trips on the rear. The shovel equipment can be whatever you want. In some places they take 7 spring teeth on the rear and 2 extra gauge wheels on the front section. Spring-tooth attachments can be supplied for the front. Gauge shoes can be supplied in place of gauge wheels.

Every adjustment necessary to do first-class work under varying conditions is provided—and all are simple and easy to make. The 420-G is a strictly modern cultivator in every respect. It is just as easy to handle as smaller tractor cultivators, the only difference being that when a four-row cultivator is used it is necessary that the crop be planted with a four-row planter so that the operator needs to watch only one row at a time. The man who grows large acreages of corn or cotton should see this cultivator in the McCormick-Deering dealer's store.

Illust. 95. Down in the Illinois river bottom in Fulton County corn grows about as lush as you will find it anywhere. Here you see the Farmall 30 with the 420-G cultivator doing a first-class job.

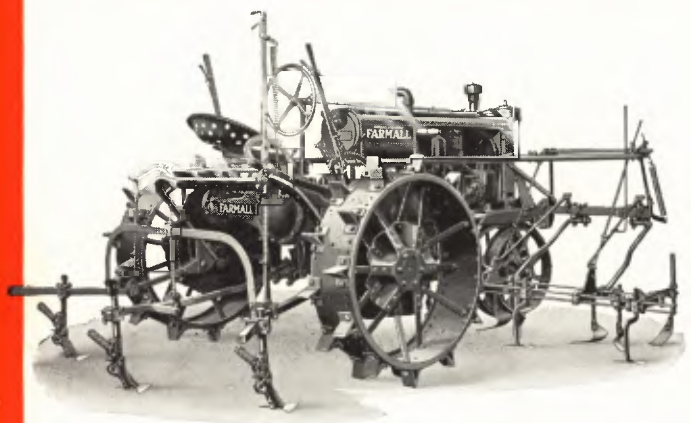
Farmall *Beet and Bean* Cultivators, 424-G, 405-A, 406-A

Illust. 96. Mr. T. W. Fooks cultivating soybeans with the No. 624-G on the E. R. Shaw farm near Oneida, Ill.

THE Farmall No. 424-G cultivator meets the requirements of the most particular grower. It is especially recommended for those who plant soybeans in rows. To get a proper idea of how easy it is to use one of these cultivators in narrow row crops, one has to think of the cultivator and an F-20 or F-30 Farmall as a cultivating unit. Easy steering makes it possible to follow the rows exactly and the variable governor control enables the operator to slow the tractor down in first cultivation so that he is able to get into the crop just as soon as the plants are up far enough to mark the rows, and do a first-class job.

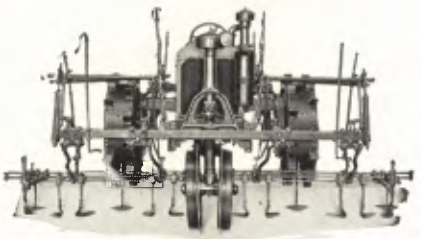
The two pairs of parallel tool bars permit arranging any of the usual beet and bean ground-working tools in any desired combination and for cultivating four rows 18 to 32 inches apart or six rows (No. 624-G) 18 to 22 inches apart. A link parallel with the beam which connects the front gangs with the heavy drawbar across the front of the tractor holds the front gangs always at the same angle with the ground regardless of the depth. Adjustable springs adapt the pressure on the gangs to soil conditions. The depth of the tools at the outer ends of the bars is held uniform by gauge shoes (or gauge wheels).

The usual ground tools are available: knife and disk weeders, duck feet, deer tongues, diamond points, irrigating shovels, etc. Ten tool bar clamps are supplied with the cultivator.



Illust. 97. The No. 424-G Farmall beet and bean cultivator for F-20 and F-30 tractors. It can be supplied in hand or single or double power-lift type.

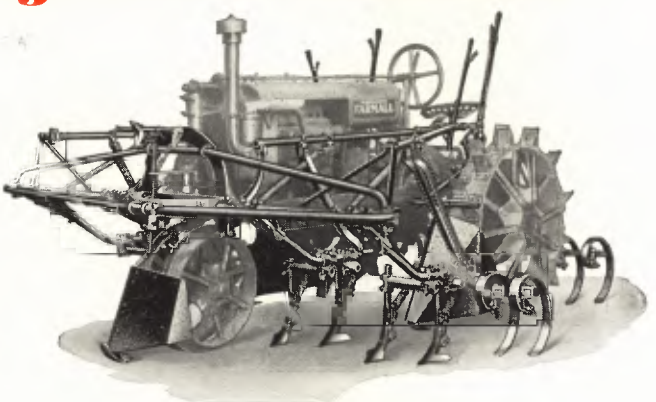
Illust. 98. Two pairs of gangs like these convert the 424-G into a standard row-crop cultivator.



Illust. 99. A front view of the No. 424-G Farmall cultivator.

Ground Tools in *Any Combination*

Illust. 100. The No. 405-A cultivator. Other equipment is available including four- and six-row parallel bar attachments for cultivating beets.

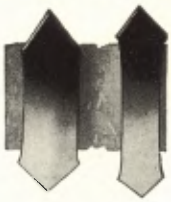


Illust. 101. The Farmall beet and bean cultivator N-406-A. The vine lifters are special.

THE No. 405-A has long been a popular cultivator for beet and bean cultivation. The width of the cultivator and the ease with which the outfit is controlled enable a man to get over three or four times as much ground as he could with horses. The ground-working equipment can be set for rows spaced 22 inches apart or alternating 18 and 22 inches or 18 and 24 inches. The cultivator is particularly adapted to irrigated sections where it is the practice to run an irrigation furrow every second row. The cultivator can be variously equipped to meet conditions wherever beets or beans are grown.

THE N-406-A cultivator is adapted for use with the narrow-tread Farmall 20 with offset wheels set in to 57-inch tread. This wheel tread puts two rows inside and two rows outside the rear wheels. When cultivating in rows spaced 18 and 22 inches alternately, the tractor wheels are reversed to obtain a tread of 77 inches. This places all four rows inside the rear wheels. The illustration above shows a popular arrangement of gangs and equipment. Another combination popular for irrigated fields is with ten spring trips on the front, three on the rear, and four pairs of rotary weeders and five 11-inch wing hillers. The hillers are used for running irrigation furrows. Other arrangements are possible. Regular equipment includes four pairs of shields.

Ground-Working Equipment for Farmall Cultivators to Meet Conditions *Anywhere*



Illust. 102.
Double point shovels.

Illust. 103.
No. 9 deer tongue.

Illust. 104. Six-inch spearhead shovel.

Illust. 105. No. 3 rotary-weeder shield attached to shovel standard.

Illust. 106. The No. 1 rotary-weeder attachment.

Illust. 107. Full-sweep attachment.

Illust. 108. Half-sweep attachment.

Illust. 109.
Double-spring tooth.

Illust. 110.
Disk weeder.

Illust. 111.
Duck-foot shovel.

Illust. 112. The hilling attachment and irrigating shovel.

Illust. 113.
No. 4 knife weeder.

Illust. 114.
McGregor-type sweep.

Illust. 115.
Joyce-type sweep.

Illust. 116. Two-piece or detachable-point shovel.

Illust. 117. Adjustable knife weeder for beet cultivators.

Illust. 118.
Disk weeder.

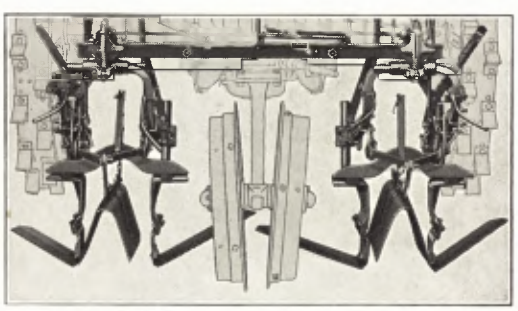
THE same shovels, sweeps, etc., available for other McCormick-Deering cultivators are available for Farmall cultivators. Most of the cultivators are equipped with No. 9 spring trips or double spring teeth or combinations of these, but the ground equipment is optional. Any grower can have his Farmall cultivator equipped to meet his particular preference. This applies to all except the No. 424-G beet and bean cultivator, which is supplied with clamps only, the purchaser in this case selecting whatever combination of equipment he needs.

McCormick-Deering shovels include straight and twisted shovels, deer tongues, bull tongues, etc., in standard sizes. A popular shovel is the spearhead in 6-inch size. There are also two-piece shovels with detachable points. These points are very easy to change and save considerable time in the busy cultivating season. They are also inexpensive. They have good scouring qualities, are good weed killers, and splendid pulverizers.

The double-spring teeth are extra strong and are adapted to use double-pointed shovels, spearhead shovels, or sweeps. Joyce, McGregor, and IHC sweeps are available in standard sizes.

Disk hillers can be supplied in 12- and 13-inch, with short, long, and offset standards. There are rotary shields and rotary weeder attachments. The rotary weeder attachment fits on the front gangs and the wheels travel right in the rows, loosening up the soil and killing the weed seedlings. It is especially valuable in young crops. Disk weeders come in 10- and 12-inch. They are used principally on the Nos. 405-A and N-406-A.

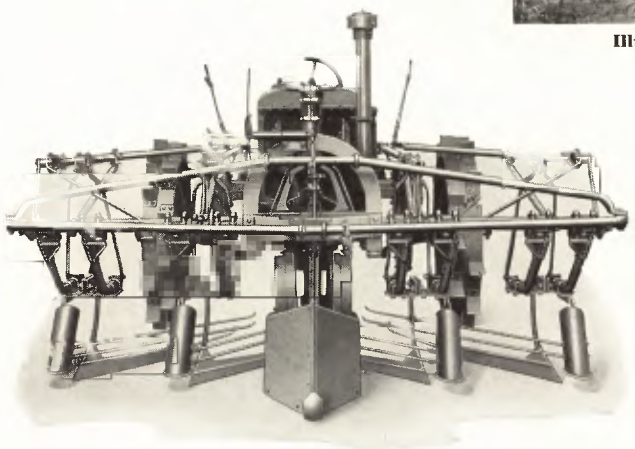
A man can cultivate seven to ten acres a day with a two-horse cultivator. He can cultivate twenty to thirty acres a day with a Farmall two-row and do it just as well or better. He can cultivate forty to sixty acres with a Farmall four-row. No matter how good a man he is on a two-horse cultivator, he's a better man on a Farmall, measured by what he gets done. He saves time, he saves money, and he saves energy.



Illust. 119. Knife attachment which can be supplied for No. 221-G cultivator.

Bean Harvester Attachments for Farmall Cultivators

Illust. 120. McCormick-Deering FARMALL with Farmall cultivator with bean harvesting attachment.



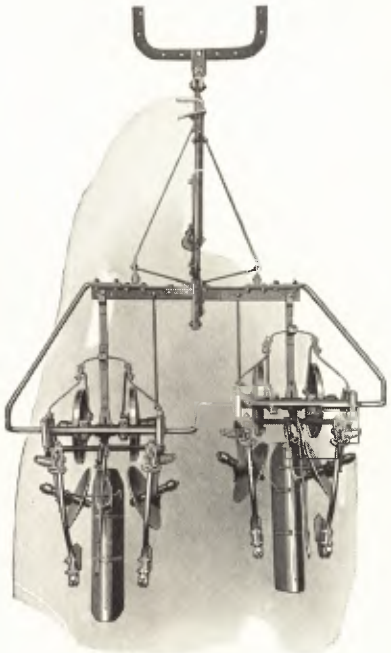
Illust. 121. Bean harvesting attachment on Farmall N-406-A cultivator. The vine lifters cost extra.

FARMALL bean harvester attachments are used while the bean pods are still moist enough to hold the beans. They cut the beans and leave them in windrows. From the windrows they can either be bunched and stacked for threshing with a stationary thresher or they may be threshed with a McCormick-Deering harvester-thresher equipped with pick-up attachment. The beans are allowed to lie in the windrows and cure a day or two, depending on whether they are to be stacked first or threshed with the combine. When cured in the windrows, the weeds are dried sufficiently to be easily separated from the beans in threshing, the result being a clean job. Bean harvester attachments are supplied in two- and four-row—the two-row for Nos. 203-A, 210-G, 221-G and 424-G cultivators; the four-row for No. N-406-A.

In Illust. 121 you will notice that the attachments replace the regular cultivator standards and that the units are raised, lowered, or adjusted by the cultivator levers in the same manner as the cultivator gangs.

McCormick-Deering Farmall *Lister Cultivators*

THE lister cultivators for the F-20 and F-30 tractors are the No. F-35 two-row and the No. FA-40 four-row. These cultivators employ a new principle in lister cultivator construction. Each of the units is free to follow its own row, but instead of simply trailing and swinging from side to side from a one-point hitch each unit is held square with its row, shovels and disks meeting the soil always at the correct working angles. The gangs are hitched to a heavy steel angle iron frame, and there is a link parallel with each gang hitch bar which allows the gangs to work sidewise, the front end moving just as much to the side as the rear.



Illust. 122. A top view of the F-35 cultivator, showing the arrangement of the gangs and the stabilizing bar across the tops of the gangs.

Round steel bars across the tops of the cultivators serve as tracks. Each cultivating unit is equipped with a pair of roller-equipped brackets which allow the units to work sidewise on the stabilizer but prevent them from tilting. Thus, each unit is allowed perfect freedom sidewise but is held square with the row and with the ground, assuring a first-class job of cultivation.

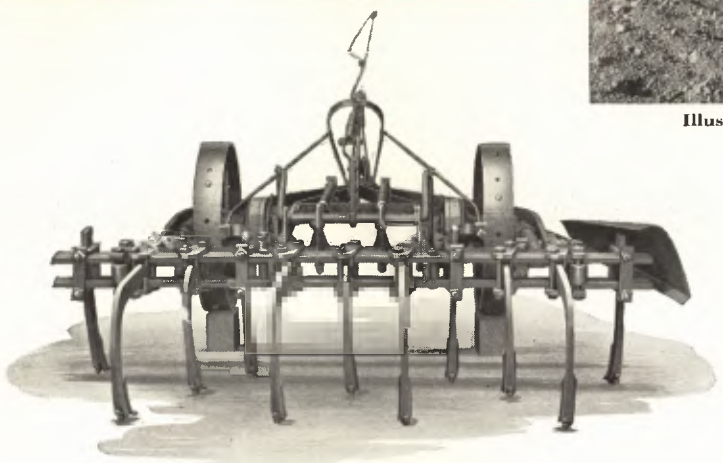
Illust. 123. Disk attachment which can be supplied for Farmall lister cultivator.

Each unit comprises a pair of furrow guide wheels, two disks, two shovels with pin-break legs, and a long shield. Spring-trip shovel legs can be supplied, also shovel attachments to use all shovels instead of shovels and disks, and knife and disk attachments. Shovels are 2½ x 9 in., single point.

Illust. 124. The No. FA-40 four-row lister cultivator.

McCormick-Deering No. 2 *Tractor Cultivator* for Deep, Thorough Work

Illust. 125. McCormick-Deering FARMALL pulling a No. 2 tractor cultivator. The Farmall has ample power for this job.

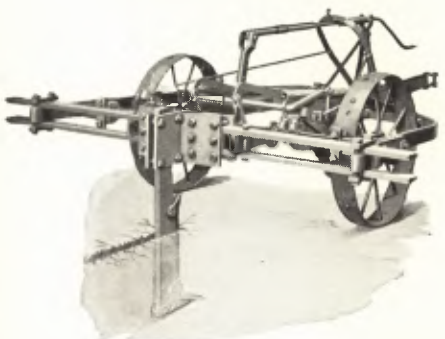


Illust. 126. The McCormick-Deering No. 2 tractor cultivator. It is nicely suited to use with Farmall power.

THE McCormick-Deering tractor cultivator is a deep tillage implement much in use in orchards and vineyards and where deep seed beds are wanted. It will dig into any tillable soil regardless of conditions and make a thoroughly broken and mellow seed bed. It will loosen the soil to a depth of 9 inches or more.

If a plow sole, or layer of hard soil or shale, underlies the seed bed, the tractor cultivator will break it up and greatly increase the moisture-storing capacity of the soil.

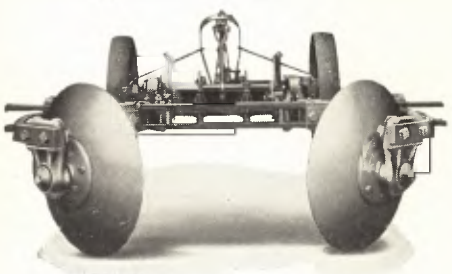
The cost of preparing potato ground can often be greatly reduced by using this implement. Whether the ground is plowed first or not the tractor cultivator is worked to a depth of 8 or 9 inches, thoroughly loosening the soil and leaving it in a condition that is ideal for potatoes. Those who have used the tractor cultivator in this way claim that they have secured larger yields and a better product.



Illust. 127. No. 2 tractor cultivator with No. 2 subsoil attachment which can be set to work, under favorable conditions, at a depth of 15 to 17 inches.

The sizes are 5, 6, 7, and 8 feet. There is a power lift on each side of the machine and both working together assure a square lift. The teeth are in three ranks to give ample trash clearance between them. The standards in the front rank can be separately adjusted for depth. The 5-foot cultivator can be supplied with all teeth adjustable, adapting it especially to orchard and vineyard work.

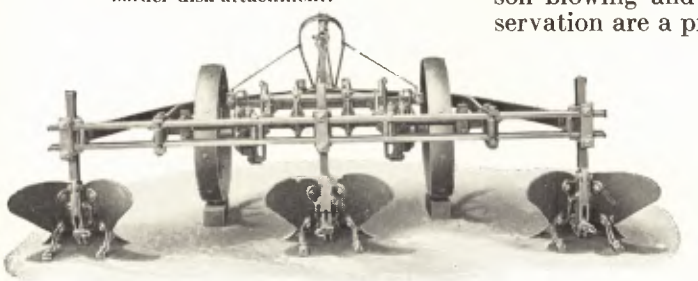
Illust. 130. The moldboard hiller attachment which can be supplied for tractor cultivators. It can be supplied without the shank for Farmall cultivators.



Illust. 128. No. 2 tractor cultivator with border-disk attachment.

Irrigating tool bars can be supplied in 6- and 9-foot sizes. Other equipment that can be supplied includes middle-buster attachment, a heavy subsoil attachment, a light subsoil attachment, and one in between the light and the heavy, a border-disk attachment, alfalfa points, and spring-release hitch.

With border-disk attachment the tractor cultivator is being used with success for terracing pasture land in sections where soil blowing and moisture conservation are a problem.



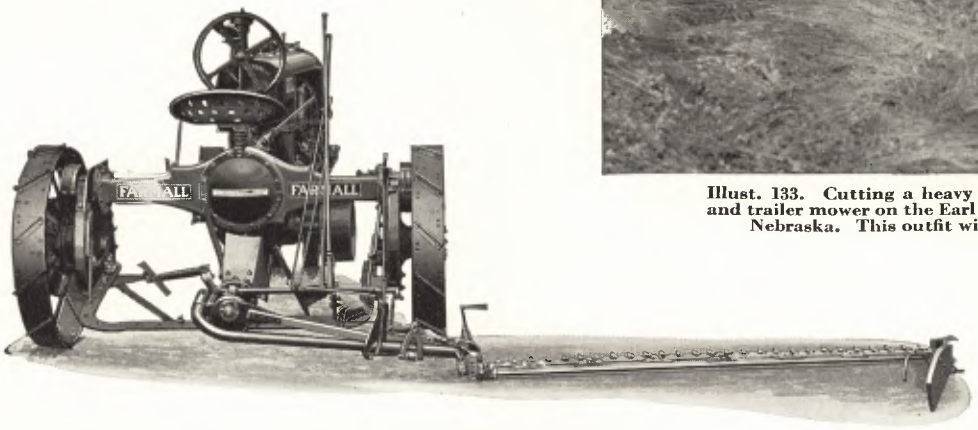
Illust. 129. The tractor cultivator with middle-buster attachment in place of regular teeth.

Illust. 131. Detail of the No. 1 subsoil attachment.

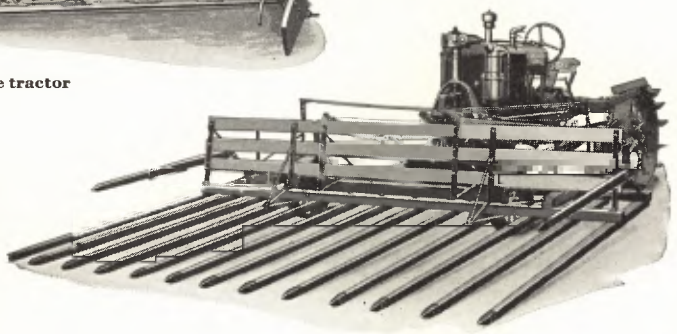
Illust. 132. Alfalfa renovator tooth.

Make Hay
The Farmall Way for Speed and Economy

Illust. 133. Cutting a heavy crop with Farmall 7-foot mower and trailer mower on the Earl Monahan Ranch, near Whitman, Nebraska. This outfit will cut 40 to 50 acres in a day.



Illust. 134. Farmall 20 with 7-foot Farmall mower. Note that the tractor wheels are equipped with meadow lugs.



Illust. 135. The Farmall 12-foot sweep rake attached to the F-20 tractor. It makes a one-man outfit that will move a lot of hay or bundles in a day.

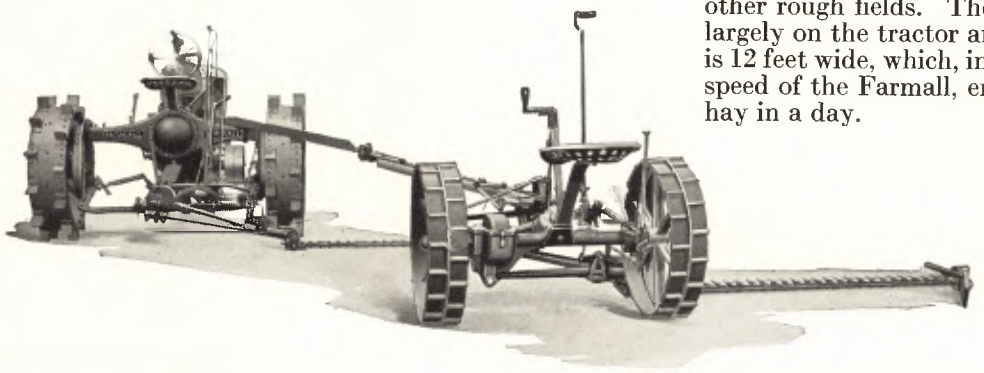
MAKE hay while the sun shines is an old rule easy to follow when the Farmall supplies the power. The Farmall cuts the grass, rakes, teds, pulls the loader, and will haul it to stack or mow.

When the weather is uncertain, and you would ordinarily cut and store a little dab at a time, the speed with which Farmall power enables you to get things done makes it possible to get your hay in several times as fast, and when the hay is right. You not only save time but from one year to another you will have better hay because of the timeliness of the different operations and the fact that you do not have to take risks by putting the hay up before it is properly cured, or when it is damp.

The Farmall mower cuts a 7-foot swath. It can be attached to the tractor in a few minutes. The cutter bar is driven by the power take-off, which is ideally located for this purpose. It is a high-grade mower in every respect, with the same cutter bar as all other McCormick-Deering mowers. The gears run in oil. A safety feature is provided so that if the cutter bar strikes a stump or rock it lets loose and swings back, thus preventing breakage. A slip clutch in the power take-off connection prevents damage if any hard object gets caught in the knife.

The usual cutting speed is three miles an hour, but the high speed can be used in many cases. A square corner can be turned without backing or circling. The mower has ample clearance for heavy crops.

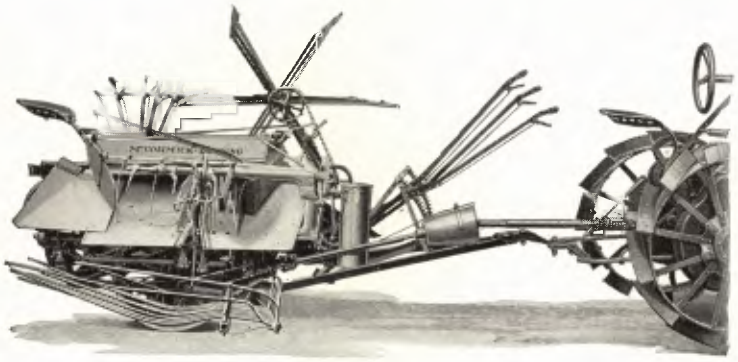
The Farmall sweep rake affords a quick way for bunching and moving hay for stacking, and for gathering grain shocks for threshing or stacking. One man handles the outfit easily. The teeth can be raised by means of the lever, and locked in position. This makes it especially suited to irrigated land and other rough fields. The weight of the hay is carried largely on the tractor and the rake wheels. The rake is 12 feet wide, which, in connection with the traveling speed of the Farmall, enables a man to move a lot of hay in a day.



Illust. 136. A Farmall with 7-foot Farmall mower and hitch with 7-foot trailing mower.

Harvest-Field *Heat Never Hampers* the Farmall

Illust. 137. A Farmall 20 pulling a McCormick-Deering tractor binder. Cutter bar and binding mechanism are operated through the power take-off.



Illust. 138. This shows how the McCormick-Deering tractor binder is coupled to the Farmall. Note that the binder levers project forward to within easy reach of the operator.

McCormick-Deering Harvester-Threshers

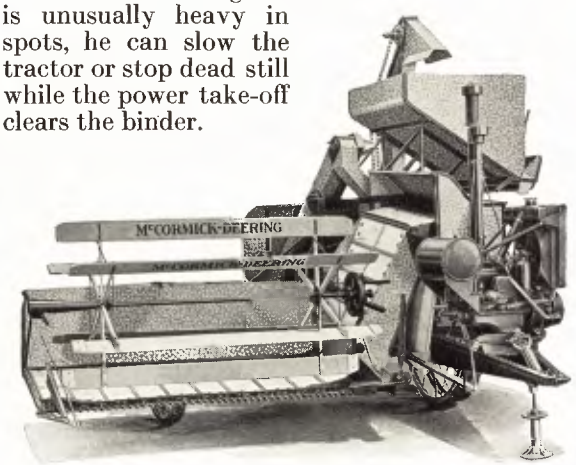
HARVEST TIME, to the man who owns a McCormick-Deering harvester-thresher, is a matter of days instead of weeks or months. He needs no crew of outside help—doesn't have to trade labor with his neighbor. He has more time for fall plowing, caring for livestock, and other profit-producing work. He does not worry that bad weather may ruin his crop in the shock. He can start cashing in on his crop the moment his outfit begins to work.

McCormick-Deering harvester-threshers are made in different models with from 6 to 16-foot cut. They can be equipped to harvest not only small grain but soybeans, flax, clover, alfalfa, beans, peas, etc. The nearest McCormick-Deering dealer can give you full information on any of these models.

McCormick-Deering Tractor Binders

WHEN the harvest sun beats down and the heat rolls back from glaringly yellow fields in blistering waves, the Farmall with the tractor binder pegs right along at a three- or four-mile gait. Like Shadrach and his friends in the fiery furnace, the Farmall "suffers no hurt." It never stops to blow—it will not die of sunstroke. The Farmall owner, as the sheaves of ripe grain drop from the carrier, has no worry. He knows that he can work his tractor the whole day long—extra hours if necessary—without danger.

The Farmall will pull any grain binder (with suitable hitch) but for a real combination take the McCormick-Deering tractor binder. It operates from the power take-off, and the tractor operator can reach the levers—doesn't need a man on the binder. If the grain is unusually heavy in spots, he can slow the tractor or stop dead still while the power take-off clears the binder.



Illust. 139. The McCormick-Deering No. 22 harvester-thresher. It cuts an 8-foot swath (10-foot with 2-foot platform extension)—making harvesting and threshing a family affair.

Illust. 140. Cutting wheat with a McCormick-Deering No. 60 harvester-thresher, a six-foot power-drive machine that is ideal for many farms.

Farmall *Corn Pickers* for Utmost Speed and *Economy* in Corn Harvest

Illust. 141. Picking corn with the Farmall two-row elevator-type corn picker. This outfit will husk 16 to 18 acres a day easily.

FROM the broiling days of grain harvest (preceding page) to corn-picking time is quite a jump. For the man who has to husk his corn an ear at a time it's a jump that may keep him in the cornfield till icicles freeze on his eyebrows and whiskers, and his cold fingers are almost as stiff as the ears he throws at the bang board.

Picking corn by hand is a slow, hard method, and expensive. Of the many who still pick with a shuckin' peg, who would think of going back to the scythe - and - cradle method of harvesting grain?

Farmall corn pickers make corn harvest a matter of days instead of weeks. One man with a Farmall one-row will husk 8 to 10 acres a day; with a two-row a man and one or more haulers, according to the yield and the length of the haul, can husk and crib 16 to 18 acres a day. A Farmall picker will actually get more corn from a given field than the average hand husker and husk it just as clean or cleaner. It gets the down and leaning stalks and it gets the nubbins. Far less help is needed and that pleases the housewife.

Illust. 142. The Farmall No. 11 one-row tank-type corn picker.

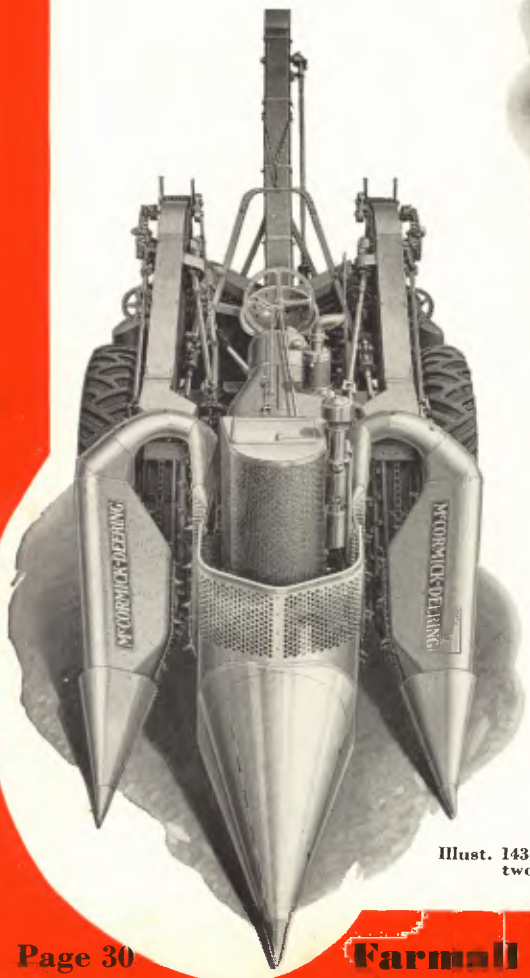
The one-row tank-type picker provides a compact, one-man outfit with which the corn can be dropped into truck, wagon, or crib at the end of the field. One additional advantage of the two-row is that it can be started anywhere in the field the operator wants to start without the necessity of first picking out the opening rows by hand. Another advantage of the two-row is the fact that the wagon can be pulled behind the tractor without side draft.

Farmall pickers are built with large and efficient snapping rolls. The husking rolls are so designed that they turn the ears over, allowing the pegs to loosen the shucks so that the smooth parts of the rolls will take hold and pull the shucks off the ears.

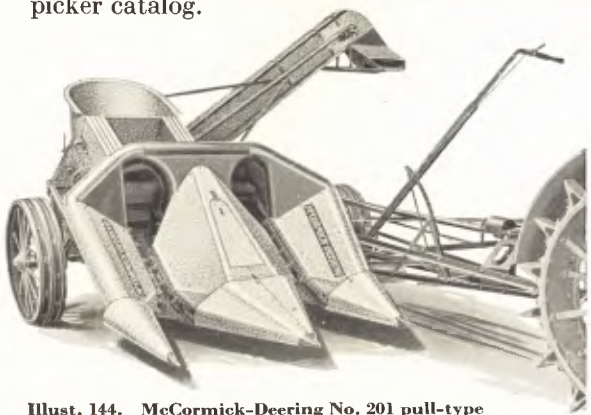
The nearest McCormick-Deering dealer will tell you about these pickers, or you may write International Harvester Company for corn picker catalog.

Pull-Type Pickers

McCormick-Deering corn pickers are also made in the pull-type in both one and two-row. They are equipped with the same gathering, snapping, and husking units as the Farmall pickers. One advantage of the pull-type picker is the ease with which it is connected to or disconnected from the tractor. Additional information will be supplied by a McCormick-Deering dealer, or you can mark and return the card in the back of this catalog.



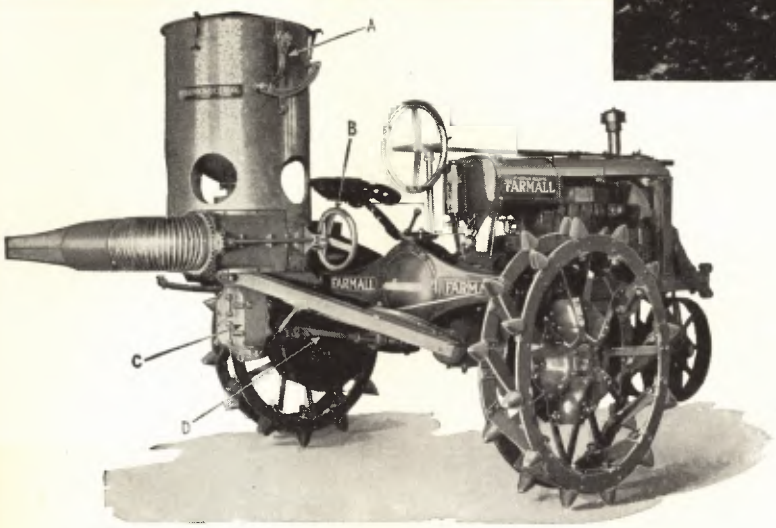
Illust. 143. The Farmall No. 22-B two-row corn picker.



Illust. 144. McCormick-Deering No. 201 pull-type corn picker.

McCormick-Deering *Tractor Duster* For Row-Crop Pests

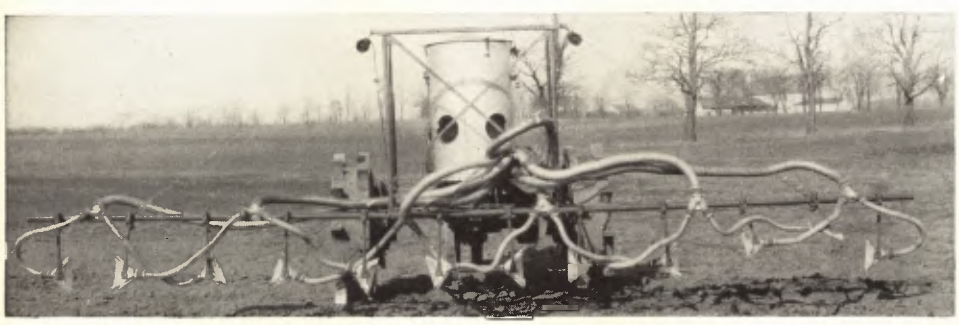
Illust. 146. Dusting cotton with a Farmall duster at the rate of 80 acres an hour. The scene is near Texarkana, Ark.



Illust. 147. A McCormick-Deering tractor duster mounted on the Farmall 20. The nozzle can be set to discharge on either side of the tractor. The mechanism is operated through the tractor power take-off.

WHEN it comes to blotting out the landscape nothing short of a wartime smoke screen beats the poison dust cloud put down by one of these tractor dusters. You have to see it to believe it—a billowing, rolling, spreading cloud that under favorable conditions reaches clear out across the average field—a wholesale slaughter of bugs. It will dust 60 to 80 rows at a time. The best time to use it is on a quiet evening just after the dew is on. Under such conditions the dust settles in around the plants and mixes with the dew so that when the bugs take a drink they get a dose of poison.

Calcium arsenate is the poison commonly used for boll weevils. The duster also handles nicotine dust, Paris green, and other insect killers, for cotton, potatoes, beans, cabbage, mint, cucumbers, and fruit trees. Six-row attachments with 6 or 12 nozzles for more forcible dusting where infestation is unusually bad can be supplied.



Illust. 148. The six-row twelve-nozzle attachment for McCormick-Deering tractor duster.

McCormick-Deering *Tractor Trailer*

THE McCormick-Deering tractor trailer fits right in with the Farmall owner's program of speedier farming operation. It is suited to all kinds of hauling—in fields, orchards, around barnyards, and on the road. It is equipped with automobile-type steel wheels with adjustable tapered roller bearings and 4½-inch demountable rims. It is regularly equipped with 6.00-16 pneumatic tires. Other features are internal expanding, fully enclosed brakes; automatic brake control (part of special tractor hitch), which applies the brake on the rear wheels as the tractor is stopped; auto-type steering knuckles; turning radius 141 inches when coupled short, 189 inches when set for 126-inch wheelbase; telescopic reach. Available in various combinations, with or without brakes, and with or without springs.

Weight as shown here, 1,089 lbs.; less springs and brakes, 688 lbs. Capacity, 5,000 lbs.

Illust. 149. McCormick-Deering tractor trailer with 6.00-16 tires, springs, manual brakes, and special hitch with automatic brake control.

These Company Branches Enable McCormick-Deering Dealers to Render Prompt and Efficient Service

BUY MACHINES WHEN YOU NEED THEM AND USE THE ADJUSTABLE INCOME-PURCHASE PLAN TO FIT THE PAYMENTS TO YOUR INDIVIDUAL INCOME

GENERATIONS AGO Cyrus Hall McCormick fathered the liberal time-payment policy which has since enabled great numbers of progressive and credit-worthy farmers to buy improved machines as needed and pay for them out of the increased earnings the machines made possible. It is not too much to say that that policy, operating consistently through good years and bad, has been a substantial factor in the progress and success of American agriculture during the past seventy-five years.

Today that policy, in the form of the INCOME-PURCHASE PLAN, reaches a new high point of usefulness to the customer. Under the INCOME-PURCHASE PLAN you, the purchaser, suggest the schedule of payments you can most conveniently meet. Payments are scaled and spaced to coincide with your seasonal cash income. Former hard-and-fast "fall due dates" have been done away with. Your purchase receives individual consideration and in every way possible the settlement is made to suit your circumstances.

The adaptation of each purchaser's payments to his own marketing program for the year enables him to pay in such amounts and at such intervals as he knows in advance he conveniently can. If he is getting hogs, or lambs, or steers ready for market he knows approximately when he will ship them and can estimate how much of the proceeds he will apply on his obligation. If he is raising wheat, or soybeans, or fruit, or potatoes he can estimate his income from these sources and figure on applying a portion of it as the cash comes to hand. If he enjoys a relatively steady income from the sale of poultry or dairy products he undoubtedly would want to arrange monthly payments of equal or varying amounts. The flexibility of the plan is such that it can be accommodated to virtually any marketing schedule.

Pay cash on delivery when you can. But when cash must be conserved you can still get the full benefit of the equipment you need by buying it under the individualized INCOME-PURCHASE PLAN offered by International Harvester and by an increasing number of local banks.

INTERNATIONAL HARVESTER COMPANY
(INCORPORATED)
180 NORTH MICHIGAN AVE. CHICAGO, ILLINOIS

Aberdeen, S. Dak.
Albany, N. Y.
Amarillo, Tex.
Atlanta, Ga.
Aurora, Ill.
Baltimore. Md.
Billings, Mont.
Birmingham, Ala.
Boston, Mass.
Buffalo, N. Y.
Charlotte, N. C.
Cheyenne, Wyo.
Chicago, Ill.
Cincinnati, Ohio
Cleveland, Ohio
Columbus, Ohio
Council Bluffs, Iowa
Dallas, Tex.
Davenport, Iowa
Denver, Colo.
Des Moines, Iowa
Dubuque, Iowa
Eau Claire, Wis.
Elmira, N. Y.
Evansville, Ind.
Fargo, N. Dak.
Fort Dodge, Iowa
Fort Wayne, Ind.
Grand Forks, N. Dak.
Grand Island, Nebr.
Grand Rapids, Mich.
Great Falls, Mont.
Green Bay, Wis.
Harrisburg, Pa.
Houston, Tex.
Hutchinson, Kans.
Indianapolis, Ind.
Jackson, Mich.
Jacksonville, Fla.
Kankakee, Ill.
Kansas City, Mo.
Lincoln, Nebr.
Little Rock, Ark.
Los Angeles, Calif.
Louisville, Ky.
Madison, Wis.
Mankato, Minn.
Mason City, Iowa
Memphis, Tenn.
Milwaukee, Wis.
Minneapolis, Minn.
Minot, N. Dak.
Nashville, Tenn.
New Orleans, La.
New York, N. Y.
Oklahoma City, Okla.
Omaha, Nebr.
Parkersburg, W. Va.
Peoria, Ill.
Philadelphia, Pa.
Pittsburgh, Pa.
Portland, Oreg.
Quincy, Ill.
Richmond, Va.
St. Cloud, Minn.
St. Joseph, Mo.
St. Louis, Mo.
Saginaw, Mich.
Salina, Kans.
Salt Lake City, Utah
San Antonio, Tex.
San Francisco, Calif.
Shreveport, La.
Sioux City, Iowa
Sioux Falls, S. Dak.
Spokane, Wash.
Springfield, Ill.
Springfield, Mo.
Sweetwater, Tex.
Syracuse, N. Y.
Terre Haute, Ind.
Toledo, Ohio
Topeka, Kans.
Watertown, S. Dak.
Wichita, Kans.

A-223-CC. 4-14—PRINTED IN UNITED STATES OF AMERICA